SET NO. 28

JOB NO. 5424

Bill #	Date	Posted
1	1-13-55	✓
2	1-11-55	✓
3	1-18-55	✓
4	2-1-55	✓
5	2-2-55	✓
6	2-3-55	Elec.
7	2-4-55	✓

SPECIFICATIONS
FOR
IMPROVEMENT NO. 50-9
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS - GEORGIA,
FOR THE
STATE SCHOOL BUILDING AUTHORITY

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
ATLANTA, GEORGIA.

JOB NO. 5424 September 27, 1954.

IMPROVEMENT NO. 50-9,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS GEORGIA,
FOR THE
STATE SCHOOL BUILDING AUTHORITY.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS,
502 CANDLER BUILDING, ATLANTA, GEORGIA.

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120 00
45
165

This Specification includes the following:

Invitation to Bid, Proposal Forms, Statement-Bidders Qualifications, Instructions to Bidders, General Conditions, Supplementary General Conditions, A-1, B-1 thru B-2, C-1 thru C-9, D-1 thru D-10, E-1 thru E-3, F-1 thru F-6, G-1 thru G-2, H-1 thru H-7, I-1 thru I-6, J-1 thru J-4, K-1 thru K-2, L-1 thru L-3, M-1 thru M-2, N-1, O-1 thru O-4, P-1 thru P-10, Q-1 thru Q-14, R-1 thru R-17, SE-1, T-1 thru T-2, U-1 thru U-4, V-1 thru V-2, W-1 thru W-3.

INVITATION TO BID

Sealed proposals from General Contractors will be received by the State School Building Authority, Owner, at Room 311, State Capitol, Atlanta, Georgia, as follows:

Until 3 P.M. Eastern Standard Time FEB 8 1955 for the construction of NEW ATHENS HIGH SCHOOL ADDITION, located in ATHENS, GEORGIA. Bidding documents may be obtained at the office of the Architects, WM. J. J. CHASE & ASSOCIATES, 502 Candler Building, Atlanta, Georgia.

At the time and place noted above, the proposals for this project will be publicly opened and read. No extension of the bidding period will be made.

Applications for documents together with deposit of $50.00 per set should be filed promptly with the Architects. Bidding material will be forwarded, shipping charges collect, as soon as possible. The full amount of deposit for one set will be refunded to each General Contractor who submits a bona fide bid upon return of such set in good condition within 30 days after date of opening of bids. All other deposits will be refunded with deductions approximating cost of reproduction of documents upon return of same in good condition within 30 days after date of opening of bids.

Contract, if awarded, will be on a lump sum basis. No bid may be withdrawn for a period of 35 days after time has been called on the date of opening. Bids must be accompanied by a bid bond in an amount not less than 5% of the base bid. Both a Performance and a Payment Bond will be required in an amount equal to 100% of the contract price.

The Owner reserves the right to reject any or all bids and to waive technicalities and informalities.

STATE SCHOOL BUILDING AUTHORITY

By Fred Hand, Chairman

SECTION B

Date:________________________

State School Building Authority,
Room 311, State Capitol,
Atlanta, Georgia.

Re: IMPROVEMENT NO. 50-9,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

Gentlemen:

B-01. Having carefully examined the Specifications entitled NEW ATHENS HIGH SCHOOL ADDITION, ATHENS, GEORGIA, IMPROVEMENT NO. 50-9, and the drawings similarly entitled, Numbered A-1 thru A-22 inclusive, E-1 thru E-7, inclusive, H-1 thru H-6 inclusive, P-1 thru P-7 inclusive, S-1 thru S-5 inclusive, all dated September 27, 1954, and Addendum(a) No.(s)____ as well as the premises and conditions affecting the work, the undersigned proposes to furnish all services, labor and materials called for by them for the entire work, in accordance with said documents, for the sum of

____DOLLARS

($________________________), which sum is hereinafter called the "Base Bid".

B-02. The undersigned further proposes that should any of the following alternates be accepted and be incorporated in the contract, the Base Bid will be altered in each case as follows:

Alternate No. 1. If all Venetian Blinds are omitted except in areas noted on Sheet A-9, deduct the sum of

____DOLLARS

($____________________________)

Alternate No. 2. Stage Equipment, Section U. If all Stage Equipment is omitted except Items No. 1, 2, 3, 7, 9, 10, 13, 14 and 16 shown on Sheet No. A-4, deduct the sum of

Note: Items Nos. 3, 9, and 16 are not in the Contract for Stage Equipment but are to be furnished and installed by the Electrical Contractor.

____DOLLARS

($____________________________)

B-03. For and in consideration of the sum of $1.00, the receipt of which is hereby acknowledged, the undersigned agrees that this proposal may not be revoked or withdrawn after the time set for the opening of bids, but shall remain open for acceptance for a period of thirty-five (35) days following such time.

B-04. In case he be notified in writing by mail, telegraph, or delivery of the acceptance of this proposal within thirty-five (35) days after the time set for the opening of bids, the undersigned agrees to execute within ten (10) days a contract (A.I.A. Standard Form of Agreement between Contractor and Owner when a stipulated sum forms the basis of payment) for the work for the above stated compensation, and at the same time to furnish and deliver to the Owner a Performance Bond and a Payment Bond (A.I.A. Form 107) both in an amount equal to 100% of the contract sum and with alterations as provided in Article E-28 of the General Conditions.

B-05. The undersigned agrees to commence actual physical work on the site with an adequate force and equipment within ten days of a date to be specified in a written order of the Owner and to complete fully all work in________________consecutive calendar days from and including said date.

B-06. Inclosed here is a bid bond * in the amount of

____DOLLARS

($________________________), (being not less than 5% of the Base Bid). The undersigned agrees that the above stated amount is the proper measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute the contract and to furnish the Performance and Payment Bond in case this proposal is accepted, and further agrees to the following:

B-07. If this proposal is accepted within thirty-five (35) days after the date set for the opening of bids and the undersigned fails to execute the contract within ten (10) days after written notice of such acceptance or if he fails to furnish both Performance and Payment Bond (A.I.A. Form 107), the obligation of the bid bond will remain in full force and effect and the money payable thereon shall be paid into the funds of the Owner as liquidated damages for such failure; otherwise obligation of the bond will be null and void.

* Certified checks not acceptable.

B-08. The bidder submits the following statement of bidder's qualifications for consideration of the Owner.

STATEMENT OF BIDDERS QUALIFICATIONS

To accompany bids submitted for Construction of a ____________________

building at ____ Georgia.

Name of Bidder ____

Business Address ____

When Organized ____

Where Incorporated ____

How many years have you been engaged in the contracting business under the present firm name? ____________________________

Financial Statement ____

Credit Available for this Contract $ ________________________

Contracts now in hand, Gross Amount $ ________________________

Plan of Organization ____

____

Have you ever refused to sign a contract at your original bid?

____

Have you ever defaulted on a contract? ________________________

Remarks: ____

____

(The above statements must be subscribed and sworn to before a Notary Public.)

Date ________________________

Firm Name ________________________

By ________________________

Title ________________________

____
(Notary Public)

Respectfully submitted,

Name__________________________________

Address_______________________________

____

By____________________________________

Title__________________________________

The full names and addresses of persons and firms interested in the foregoing bids as principals are as follows:

____

____

____

The legal name of the bidder is:

____

SECTION C

INSTRUCTIONS TO BIDDERS

C–01. Basis of Contract: See Invitation to Bid and Proposal Form.

C–02. Bid Security: See Invitation to Bid and Proposal Form.

C–03. Interpretations: No oral interpretation will be made to bidders as to the meaning of the drawings and specifications. Requests for interpretation of drawings and specifications must be made in writing to the architect not later than five (5) days prior to date set for receipt of the proposals, and failure on the part of the successful bidder to do so shall not relieve him as contractor of the obligations to execute such work in accordance with a later interpretation by the architect. All interpretations made to bidders will be issued in the form of addenda to the plans and specifications and will be sent to all bidders. Such addenda are to be covered in the proposals, and in closing the contract they will become a part thereof.

C–04. Proposals:

(a) Proposals will be opened and read as stated in the Invitation to Bid.

(b) All bids must be submitted in duplicate upon the same form as the blanks shown in Section B, and both copies must be signed. All blanks on the proposal form must be filled in. Three loose copies are furnished bidders for their use. Numbers shall be written in English words and in Arabic numerals, and the completed form shall be without interlineations, alterations or erasures. Failure to submit a bid in the form requested or the inclusion of any alternates, conditions, limitations or provisions not called for will render the bid irregular and shall be considered sufficient cause for rejection of bid. Failure to complete entries in all blanks in the proposal form shall be considered sufficient cause for rejection of a proposal.

(c) Bids are to be addressed to the Building Authority, Atlanta, Georgia, at the address and room number shown in the Advertisement for Bids, and must be inclosed in an opaque, sealed envelope marked with the name and number of the improvement and identified with the words "Proposal for Construction." Bids are to reach the address designated in the Advertisement for Bids **not later** than the hour and date named in the Advertisement for Bids. After that time no bids may be received or withdrawn.

(d) All alternates are deductive and must be bid on. See Paragraph E–21.

(e) Proposals together with the full bid security accompanying same may be withdrawn by bidders prior to the time set for official opening. After time has been called, no bid may be withdrawn for a period of thirty-five days after the TIME and DATE of opening. Negligence or error on the part of any bidder in preparing his bid confers no right of withdrawal or modification of his bid after time has been called. Sureties and principals are advised that the Authority cannot give consideration to any plea of error in the preparation of a proposal.

C–05. Examination of Site: The bidder's attention is directed to Paragraph E–17 and Paragraph E–05 (c).

C–06. Contract Form and Bonds: The bidder's attention is directed to Paragraph B–04.

C–07. Award: The Owner reserves the right to reject any or all bids and to waive any technicalities and informalities. (See also Paragraph C–01.)

THE GENERAL CONDITIONS OF THE CONTRACT FOR THE CONSTRUCTION OF BUILDINGS

Standard Form of The American Institute of Architects

THE STANDARD FORM OF GENERAL CONDITIONS, SIXTH EDITION, HAS RECEIVED THE APPROVAL OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA; THE CONTRACTING PLASTERERS' INTERNATIONAL ASSOCIATION; THE NATIONAL BUILDING GRANITE QUARRIES ASSOCIATION, INC.; THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION; THE PAINTING AND DECORATING CONTRACTORS OF AMERICA, AND THE PRODUCERS' COUNCIL, INC.

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INDEX TO THE ARTICLES OF THE GENERAL CONDITIONS

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2. Execution, Correlation and Intent of Documents.
3. Detail Drawings and Instructions.
4. Copies Furnished.
5. Shop Drawings.
6. Drawings and Specifications on the Work.
7. Ownership of Drawings and Models.
8. Samples.
9. Materials, Appliances, Employees.
10. Royalties and Patents.
11. Surveys, Permits and Regulations.
12. Protection of Work and Property.
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36. Subcontracts.
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40. Arbitration.
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42. Use of Premises.
43. Cutting, Patching and Digging.
44. Cleaning Up.

Art. 1 Definitions.

(a) The Contract Documents consist of the Agreement, the General Conditions of the Contract, the Drawings and Specifications, including all modifications thereof incorporated in the documents before their execution. These form the Contract.

(b) The Owner, the Contractor and the Architect are those mentioned as such in the Agreement. They are treated throughout the Contract Documents as if each were of the singular number and masculine gender.

(c) The term Subcontractor, as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnishes material not so worked.

(d) Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

(e) The term "work" of the Contractor or Subcontractor includes labor or materials or both.

(f) All time limits stated in the Contract Documents are of the essence of the Contract.

(g) The law of the place of building shall govern the construction of this Contract.

Art. 2. Execution, Correlation and Intent of Documents.—The Contract Documents shall be signed in duplicate by the Owner and the Contractor. In case the Owner and the Contractor fail to sign the General Conditions, Drawings or Specifications, the Architect shall identify them.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, branch, class or trade of the specifications shall be supplied unless distinctly so noted on the drawings. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

Art. 3. Detail Drawings and Instructions.—The Architect shall furnish with reasonable promptness, additional instructions, by means of drawings or otherwise, necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom.

The work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and instructions.

The Contractor and the Architect, if either so requests, shall jointly prepare a schedule, subject to change from time to time in accordance with the progress of the work, fixing the dates at which the various detail drawings will be required, and the Architect shall furnish them in accordance with that schedule. Under like conditions, a schedule shall be prepared, fixing the dates for the submission of shop drawings, for the beginning of manufacture and installation of materials and for the completion of the various parts of the work.

Art. 4 Copies Furnished.—Unless otherwise provided in the Contract Documents the Architect will furnish to the Contractor, free of charge, all copies of drawings and specifications reasonably necessary for the execution of the work.

Art. 5. Shop Drawings.—The Contractor shall submit with such promptness as to cause no delay in his own work or in that of any other Contractor, two copies of all shop or setting drawings and schedules required for the work of the various trades, and the Architect shall pass upon them with reasonable promptness, making desired corrections, including all necessary corrections relating to artistic effect. The Contractor shall make any corrections required by the Architect, file with him two corrected copies and furnish such other copies as may be needed. The Architect's approval of such drawings or schedules shall not relieve the Contractor from responsibility for deviations from drawings or specifications, unless he has in writing called the Architect's attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings or schedules.

Art. 6. Drawings and Specifications on the Work. —The Contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the Architect and to his representatives.

Art. 7. Ownership of Drawings and Models.—All drawings, specifications and copies thereof furnished by the Architect are his property. They are not to be used on other work and, with the exception of the signed Contract set, are to be returned to him on request, at the completion of the work. All models are the property of the Owner.

Art. 8. Samples.—The Contractor shall furnish for approval all samples as directed. The work shall be in accordance with approved samples.

Art. 9. Materials, Appliances, Employees.—Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

Art. 10 Royalties and Patents.—The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified, but

if the Contractor has information that the process or article specified is an infringement of a patent he shall be responsible for such loss unless he promptly gives such information to the Architect or Owner.

Art. 11. Surveys, Permits and Regulations.—The Owner shall furnish all surveys unless otherwise specified. Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Architect in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Architect, he shall bear all costs arising therefrom.

Art. 12 Protection of Work and Property.—The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents.

The Contractor shall take all necessary precautions for the safety of employees on the work, and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public and shall post danger signs warning against the hazards created by such features of construction as protruding nails, hod hoists, well holes, elevator hatchways, scaffolding, window openings, stairways and falling materials; and he shall designate a responsible member of his organization on the work, whose duty shall be the prevention of accidents. The name and position of the person so designated shall be reported to the Architect by the Contractor.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Architect or Owner, is hereby permitted to act, at his discretion, to prevent such threatened loss or injury, and he shall so act, without appeal, if so instructed or authorized. Any compensation, claimed by the Contractor on account of emergency work, shall be determined by agreement or Arbitration.

Art. 13. Inspection of Work.—The Architect and his representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection.

If the specifications, the Architect's instructions, laws, ordinances or any public authority require any work to be specially tested or approved, the Contractor shall give the Architect timely notice of its readiness for inspection, and if the inspection is by another authority than the Architect, of the date fixed for such inspection. Inspections by the Architect shall be promptly made, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Architect, it must, if required by the Architect, be uncovered for examination at the Contractor's expense.

Re-examination of questioned work may be ordered by the Architect and if so ordered the work must be uncovered by the Contractor. If such work be found in accordance with the Contract Documents the Owner shall pay the cost of re-examination and replacement. If such work be found not in accordance with the Contract Documents the Contractor shall pay such cost, unless he shall show that the defect in the work was caused by another Contractor, and in that event the Owner shall pay such cost.

Art. 14. Superintendence: Supervision.—The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Architect. The superintendent shall not be changed except with the consent of the Architect, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The

superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case.

The Contractor shall give efficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications and other instructions and shall at once report to the Architect any error, inconsistency or omission which he may discover, but he shall not be held responsible for their existence or discovery.

Art. 15. Changes in the Work.—The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Architect shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the building, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from the Owner signed or countersigned by the Architect, or a written order from the Architect stating that the Owner has authorized the extra work or change, and no claim for an addition to the contract sum shall be valid unless so ordered.

The value of any such extra work or change shall be determined in one or more of the following ways :

(a) By estimate and acceptance in a lump sum.
(b) By unit prices named in the contract or subsequently agreed upon.
(c) By cost and percentage or by cost and a fixed fee.

If none of the above methods is agreed upon, the Contractor, provided he receives an order as above, shall proceed with the work. In such case and also under case (c), he shall keep and present in such form as the Architect may direct, a correct account of the cost, together with vouchers. In any case, the Architect shall certify to the amount, including reasonable allowance for overhead and profit, due to the Contractor. Pending final determination of value, payments on account of changes shall be made on the Architect's certificate.

Should conditions encountered below the surface of the ground be at variance with the conditions indicated by the drawings and specifications the contract sum shall be equitably adjusted upon claim by either party made within a reasonable time after the first observance of the conditions.

Art. 16. Claims for Extra Cost.—If the Contractor claims that any instructions by drawings or otherwise involve extra cost under this contract, he shall give the Architect written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property, and the procedure shall then be as provided for changes in the work. No such claim shall be valid unless so made.

Art. 17. Deductions for Uncorrected Work.—If the Architect and Owner deem it inexpedient to correct work injured or done not in accordance with the Contract, an equitable deduction from the contract price shall be made therefor.

Art. 18. Delays and Extension of Time.—If the Contractor be delayed at any time in the progress of the work by any act or neglect of the Owner or the Architect, or of any employee of either, or by any separate Contractor employed by the Owner, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the Architect pending arbitration, or by any cause which the Architect shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Architect may decide.

No such extension shall be made for delay occurring more than seven days before claim therefor is made in writing to the Architect. In the case of a continuing cause of delay, only one claim is necessary.

If no schedule or agreement stating the dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure to furnish drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

This article does not exclude the recovery of damages for delay by either party under other provisions in the contract documents.

Art. 19 Correction of Work Before Final Payment.—The Contractor shall promptly remove from the premises all work condemned by the Architect as failing to conform to the Contract, whether incorporated or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work within a reasonable time, fixed by written notice, the Owner may remove it and may store the material at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten days' time thereafter, the Owner may, upon ten days' written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

Art. 20. Correction of Work After Final Payment.—Neither the final certificate nor payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defects due thereto and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of substantial completion. The Owner shall give notice of observed defects with reasonable promptness. All questions arising under this article shall be decided by the Architect subject to arbitration.

Art. 21. The Owner's Right to Do Work.—If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this contract, the Owner, after three days' written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor, provided, however, that the Architect shall approve both such action and the amount charged to the Contractor.

Art. 22. Owner's Right to Terminate Contract.—If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Architect, or otherwise be guilty of a substantial violation of any provision of the contract, then the Owner, upon the certificate of the Architect that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven days' written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work including compensation for additional managemental and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Architect.

Art. 23 Contractor's Right to Stop Work or Terminate Contract.—If the work should be stopped under an order of any court, or other public authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, or if the Architect should fail to issue any certificate for payment within seven days after it is due, or if the Owner should fail to pay to the Contractor within seven days of its maturity and presentation, any sum certified by the Architect or awarded by arbitrators, then the Contractor may, upon seven days' written notice to the Owner and the Architect, stop work or terminate this contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

Art. 24. Applications for Payments.—The Contractor shall submit to the Architect an application for each payment, and, if required, receipts or other vouchers, showing his payments for materials and labor, including payments to subcontractors as required by Article 37.

If payments are made on valuation of work done, such application shall be submitted at least ten days before each payment falls due, and, if required, the Contractor shall, before the first application, submit to the Architect a schedule of values of the various parts of the work, including quantities, aggregating the total sum of the contract, divided so as to facilitate payments to sub-

contractors in accordance with Article 37 (e), made out in such form as the Architect and the Contractor may agree upon, and, if required, supported by such evidence as to its correctness as the Architect may direct. This schedule, when approved by the Architect, shall be used as a basis for certificates of payment, unless it be found to be in error. In applying for payments, the Contractor shall submit a statement based upon this schedule, and, if required, itemized in such form and supported by such evidence as the Architect may direct, showing his right to the payment claimed.

If payments are made on account of materials delivered and suitably stored at the site but not incorporated in the work, they shall, if required by the Architect, be conditional upon submission by the Contractor of bills of sale or such other procedure as will establish the Owner's title to such material or otherwise adequately protect the Owner's interest.

Art. 25. Certificates of Payments.—If the Contractor has made application as above, the Architect shall, not later than the date when each payment falls due, issue to the Contractor a certificate for such amount as he decides to be properly due, or state in writing his reasons for withholding a certificate.

No certificate issued nor payment made to the Contractor, nor partial or entire use or occupancy of the work by the Owner, shall be an acceptance of any work or materials not in accordance with this contract. The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work appearing after final payment or from requirement of the specifications, and of all claims by the Contractor, except those previously made and still unsettled.

Should the Owner fail to pay the sum named in any certificate of the Architect or in any award by arbitration, upon demand when due, the Contractor shall receive, in addition to the sum named in the certificate, interest thereon at the legal rate in force at the place of building.

Art. 26. Payments Withheld.—The Architect may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

(a) Defective work not remedied.
(b) Claims filed or reasonable evidence indicating probable filing of claims.
(c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
(d) A reasonable doubt that the contract can be completed for the balance then unpaid.
(e) Damage to another Contractor.

When the above grounds are removed payment shall be made for amounts withheld because of them.

Art. 27. Contractor's Liability Insurance.—The Contractor shall maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death, which may arise from and during operations under this Contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. This insurance shall be written for not less than any limits of liability specified as part of this contract. This insurance need not cover any liability imposed by Article 31 of these General Conditions. Certificates of such insurance shall be filed with the Owner if he so requires.

Art. 28. Owner's Liability Insurance.—The Owner shall be responsible for and at his option may maintain such insurance as will protect him from his contingent liability to others for damages because of bodily injury, including death, which may arise from operations under this contract, and any other liability for damages which the Contractor is required to insure under any provision of this contract.

Art. 29. Fire Insurance.—The Owner shall effect and maintain fire insurance upon the entire structure on which the work of this contract is to be done to one hundred per cent of the insurable value thereof, including items of labor and materials connected therewith whether in or adjacent to the structure insured, materials in place or to be used as part of the permanent construction including surplus materials, shanties, protective fences, bridges, or temporary structures, miscellaneous materials and supplies incident to the work, and such scaffoldings, stagings, towers, forms, and equipment as are not owned or rented by the contractor, the cost of which is included in the

cost of the work. EXCLUSIONS: This insurance does not cover any tools owned by mechanics, any tools, equipment, scaffolding, staging, towers, and forms owned or rented by the Contractor, the capital value of which is not included in the cost of the work, or any cook shanties, bunk houses or other structures erected for housing the workmen. The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for the insureds as their interests may appear, except in such cases as may require payment of all or a proportion of said insurance to be made to a mortgagee as his interests may appear.

The Contractor and all subcontractors shall be named or designated in such capacity as insured jointly with the Owner in all policies, all of which shall be open to the Contractor's inspection. Certificates of such insurance shall be filed with the Contractor if he so requires. If the Owner fails to effect or maintain insurance as above and so notifies the Contractor, the Contractor may insure his own interest and that of the subcontractors and charge the cost thereof to the Owner. If the Contractor is damaged by failure of the Owner to maintain such insurance or to so notify the Contractor, he may recover as stipulated in the contract for recovery of damages. If extended coverage or other special insurance not herein provided for is required by the Contractor, the Owner shall effect such insurance at the Contractor's expense by appropriate riders to his fire insurance policy.

If required in writing by any party in interest, the Owner as Trustee shall, upon the occurrence of loss, give bond for the proper performance of his duties. He shall deposit any money received from insurance in an account separate from all his other funds and he shall distribute it in accordance with such agreement as the parties in interest may reach, or under an award of arbitrators appointed, one by the Owner, another by joint action of the other parties in interest, all other procedure being as provided elsewhere in the contracts for Arbitration. If after loss no special agreement is made, replacement of injured work shall be ordered and executed as provide for changes in the work.

The Trustees shall have power to adjust and settle any loss with the insurers unless one of the Contractors interested shall object in writing within three working days of the occurrence of loss, and thereupon arbitrators shall be chosen as above. The Trustee shall in that case make settlement with the insurers in accordance with the directions of such arbitrators, who shall also, if distribution by arbitration is required, direct such distribution.

Art. 30. Guaranty Bonds.—The Owner shall have the right, prior to the signing of the Contract, to require the Contractor to furnish bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder, in such form as the Owner may prescribe and with such sureties as he may approve. If such bond is required by instructions given previous to the submission of bids, the premium shall be paid by the Contractor; if subsequent thereto, it shall be paid by the Owner.

Art. 31. Damages.—If either party to this Contract should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone employed by him, then he shall be reimbursed by the other party for such damage, provided, the Owner shall be responsible for and at his option insure against loss of use of any of his existing property, due to fire or otherwise, however caused.

Claims under this clause shall be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement or arbitration.

The Contractor is relieved of responsibility for damages to the work due to causes beyond the control of and without fault or negligence of the Contractor.

Art. 32. Liens.—Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the Owner a complete release of all liens arising out of this Contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner, to indemnify him against any lien. If any lien remain unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

Art. 33. Assignment. Neither party to the Contract shall assign the Contract or sublet it as a

whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner.

Art. 34. Mutual Responsibility of Contractors.—Should the Contractor cause damage to any separate contractor on the work the Contractor agrees, upon due notice, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall defend such proceedings at the Owner's expense and, if any judgment against the Owner arise therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

Art. 35. Separate Contracts.—The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

If any part of the Contractor's work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Architect any defects in such work that render it unsuitable for such proper execution and results. His failure so to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

To insure the proper execution of his subsequent work the Contractor shall measure work already in place and shall at once report to the Architect any discrepancy between the executed work and the drawings.

Art. 36. Subcontracts.—The Contractor shall, as soon as practicable after the execution of the contract, notify the Architect in writing of the names of subcontractors proposed for the principal parts of the work and for such others as the Architect may direct and shall not employ any that the Architect may within a reasonable time object to as incompetent or unfit.

If the Contractor has submitted before execution of the contract a list of subcontractors and the change of any name on such list is required in writing by the Owner after such execution, the contract price shall be increased or diminished by the difference in cost occasioned by such change.

The Architect shall, on request, furnish to any subcontractor, wherever practicable, evidence of the amounts certified on his account.

The Contractor agrees that he is as fully responsible to the Owner for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the Owner.

Art. 37. Relations of Contractor and Subcontractor.—The Contractor agrees to bind every Subcontractor and every Subcontractor agrees to be bound by the terms of the Agreement, the General Conditions, the Drawings and Specifications as far as applicable to his work, including the following provisions of this article, unless specifically noted to the contrary in a subcontract approved in writing as adequate by the Owner or Architect.

This does not apply to minor subcontracts.

The Subcontractor agrees—

(a) To be bound to the Contractor by the terms of the Agreement, General Conditions, Drawings and Specifications, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Owner.

(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Article 24 of the General Conditions.

(c) To make all claims for extras, for extensions of time and for damages for delays or otherwise, to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner, except that the time for making claims for extra cost is one week.

The Contractor agrees—

(d) To be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Agreement, General Conditions, Drawings and Specifications, and by all the provisions thereof affording remedies and redress to the Contractor from the Owner.

(e) To pay the Subcontractor, upon the payment of certificates, if issued under the schedule of values described in Article 24 of the General Conditions, the amount allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein.

(f) To pay the Subcontractor, upon the payment of certificates, if issued otherwise than as in (e), so that at all times his total payments shall be as large in proportion to the value of the work done by him as the total amount certified to the Contractor is to the value of the work done by him.

(g) To pay the Subcontractor to such extent as may be provided by the Contract Documents or the subcontract, if either of these provides for earlier or larger payments than the above.

(h) To pay the Subcontractor on demand for his work or materials as far as executed and fixed in place, less the retained percentage, at the time the certificate should issue, even though the Architect fails to issue it for any cause not the fault of the Subcontractor.

(j) To pay the Subcontractor a just share of any fire insurance money received by him, the Contractor, under Article 29 of the General Conditions.

(k) To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specifically named in the subcontract.

(l) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten days of the calendar month following that in which the claim originated.

(m) To give the Subcontractor an opportunity to be present and to submit evidence in any arbitration involving his rights.

(n) To name as arbitrator under arbitration proceedings as provided in the General Conditions the person nominated by the Subcontractor, if the sole cause of dispute is the work, materials, rights or responsibilities of the Subcontractor; or, if of the Subcontractor and any other subcontractor jointly, to name as such arbitrator the person upon whom they agree.

The Contractor and the Subcontractor agree that—

(o) In the matter of arbitration, their rights and obligations and all procedure shall be analogous to those set forth in this contract.

Nothing in this article shall create any obligation on the part of the Owner to pay to or to see to the payment of any sums to any subcontractor.

Art. 38. Architect's Status.—The Architect shall have general supervision and direction of the work. He is the agent of the Owner only to the extent provided in the Contract Documents and when in special instances he is authorized by the Owner so to act, and in such instances he shall, upon request, show the Contractor written authority. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract.

As the Architect is, in the first instance, the interpreter of the conditions of the Contract and the judge of its performance, he shall side neither with the Owner nor with the Contractor, but shall use his powers under the contract to enforce its faithful performance by both.

In case of the termination of the employment of the Architect, the Owner shall appoint a capable and reputable Architect, against whom the Contractor makes no reasonable objection, whose status under the contract shall be that of the former Architect; any dispute in connection with such appointment to be subject to arbitration.

Art. 39. Architect's Decisions.—The Architect shall, within a reasonable time, make decisions on all claims of the Owner or Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

The Architect's decisions, in matters relating to artistic effect, shall be final, if within the terms of the Contract Documents.

Except as above or as otherwise expressly provided in the Contract Documents, all the Architect's decisions are subject to arbitration.

If, however, the Architect fails to render a decision within ten days after the parties have presented their evidence, either party may then demand arbitration. If the Architect renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but shall not disturb or interrupt such proceedings except where such decision is acceptable to the parties concerned.

Art. 40. Arbitration.—All disputes, claims or questions subject to arbitration under this contract shall be submitted to arbitration in accordance with the provisions, then obtaining, of the Standard Form of Arbitration Procedure of The American Institute of Architects, and this agreement shall be specifically enforceable under the prevailing arbitration law, and judgment upon the award rendered may be entered in the court of the forum, state or federal, having jurisdiction. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other.

The Contractor shall not cause a delay of the work during any arbitration proceedings, except by agreement with the Owner.

Notice of the demand for arbitration of a dispute shall be filed in writing with the Architect and the other party to the contract. If the arbitration is an appeal from the Architect's decision, the demand therefor shall be made within ten days of its receipt; in any other case the demand for arbitration shall be made within a reasonable time after the dispute has arisen; in no case, however, shall the demand be made later than the time of final payment, except as otherwise expressly stipulated in the contract.

The arbitrators, if they deem that the case requires it, are authorized to award to the party whose contention is sustained, such sums as they or a majority of them shall deem proper to compensate him for the time and expense incident to the proceeding and, if the arbitration was demanded without reasonable cause, they may also award damages for delay. The arbitrators shall fix their own compensation, unless otherwise provided by agreement, and shall assess the costs and charges of the proceedings upon either or both parties.

Art. 41. Cash Allowances.—The Contractor shall include in the contract sum all allowances named in the Contract Documents and shall cause the work so covered to be done by such contractors and for such sums as the Architect may direct, the contract sum being adjusted in conformity therewith. The Contractor declares that the contract sum includes such sums for expenses and profit on account of cash allowances as he deems proper. No demand for expenses or profit other than those included in the contract sum shall be allowed. The Contractor shall not be required to employ for any such work persons against whom he has a reasonable objection.

Art. 42. Use of Premises.—The Contractor shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Architect and shall not unreasonably encumber the premises with his materials.

The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.

The Contractor shall enforce the Architect's instructions regarding signs, advertisements, fires and smoking.

Art. 43. Cutting, Patching and Digging.—The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and he shall make good after them as the Architect may direct.

Any cost caused by defective or ill-timed work shall be borne by the party responsible therefor.

The Contractor shall not endanger any work by cutting, digging or otherwise, and shall not cut or alter the work of any other contractor save with the consent of the Architect.

Art. 44. Cleaning Up.—The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish from and about the building and all his tools, scaffolding and surplus materials and shall leave his work "broom-clean" or its equivalent, unless more exactly specified. In case of dispute the Owner may remove the rubbish and charge the cost to the several contractors as the Architect shall determine to be just.

SECTION E

SUPPLEMENTARY GENERAL CONDITIONS

E–01. The General Conditions of the Contract for the Construction of Buildings: Standard form of the American Institute of Architects, Sixth Edition, Articles 1 to 44 inclusive, bound herein and hereinafter referred to as the "A. I. A. General Conditions," and the paragraphs of this section form the General Conditions of the Contract and shall apply to the General Contractor and all Subcontractors. Where any article, paragraph, or subparagraph in the A. I. A. General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph shall remain in effect, and the supplementary provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in the A. I. A. General Conditions is amended, voided, or superseded by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.

E–02. Definitions: **(a)** Paragraph (a) of Article 1 of the A. I. A. General Conditions is amended by the addition of the following provision:

> The contract documents shall also include the signed proposal form as submitted and the notice of acceptance of said proposal.

(b) Article 1 of the A. I. A. General Conditions is amended by the addition of the following provision:

> The term "specifications" shall include all written matter contained in the bound volume and any addenda thereto.

E–03. Materials, Appliances, Employees: Article 9 of the A. I. A. General Conditions is amended by the addition of the following paragraph:

> When reference is made in the specifications to trade names or to the names of manufacturers, such references are made solely to designate and identify the quality of material or equipment to be furnished, and are not intended to restrict competitive bidding. In case the Contractor wishes to use materials and equipment other than those mentioned in the specifications, prior written approval of the architect must be obtained. The architect will approve such materials and equipment upon written request if he considers them to be suitable and equal to those specified. Wherever "approved," "satisfactory," "as directed," or similar phrases are used in these specifications, they shall be understood to mean that the material or construction method referred to shall be approved by, satisfactory to, or as directed by the architect.

E–04. Protection of Work and Property: Article 12 of the A. I. A. General Conditions is amended by the addition of the following paragraph:

> BLASTING: Any blasting by the Contractor shall be done with the use of heavy matting adequate to prevent scattering. (See also Articles E–12 and E–27.)

E–05. Changes in the Work: Article 15 of the A. I. A. General Conditions is amended by the addition of the following provisions:

- **(a)** The Owner will not be responsible for any extra work or any changes in the work involving extra cost unless approval in writing is furnished by the Owner in advance.
- **(b)** The contractor shall make no changes whatsoever in the work without written authorization from the owner.
- **(c)** Should conditions encountered below the surface of the ground be at variance with conditions indicated by drawings and specifications, the contract sum shall be equitably adjusted pursuant to Article 15 of the A. I. A. General Conditions upon claim by either party, provided, however, that the owner shall not be responsible for any extra costs for such work as may be necessitated unless he shall have authorized the work in writing prior to its commencement (See Paragraph E–17).
- **(d)** In cases (a) and (c), of Article 15, for extra work performed, the allowance for overhead and profit combined, included in the total cost to the Owner, shall be based upon the following schedule:
  1. To the Contractor for work which he performs with his own forces, not to exceed 20% of his net additional cost.
  2. To a subcontractor for work which he performs with his own forces, not to exceed 20% of his net additional cost.

3. To the Contractor for work performed by his subcontractor, not to exceed 7½% of the amount due the subcontractor. These percentages shall be applied to the net additional cost as defined herein. If the net cost value of a change results in a credit from the contractor or subcontractor, the credit given shall be the net cost without overhead or profit. The "net cost" used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein may include all items of labor or materials, the use of power tools and equipment, and all such items of cost as public liability and workmen's compensation insurance, pro rata charges for additional time of foremen, social security, old age and unemployment insurance. Among the items to be considered as overhead are insurance other than as mentioned in this article, bond premiums, supervision, superintendence, time keepers, clerks, watchmen, small tools, incidental job burdens and general office expense, and all other items not included in the cost as defined in this article.
4. Any other provisions in the contract documents to the contrary notwithstanding, only demonstrable, direct, out-of-pocket costs plus percentages set forth herein shall be allowable. No wages of a foreman shall be allowable for change order work carried on concurrently with contract work unless the costs include a claim for extension of time caused by the ordering of the change.

E–06. Omitted.

E–07. Correction of Work after Final Payment: Article 20 of the A. I. A. General Conditions is amended by the addition of the following provisions:

GUARANTEE—The contractor shall furnish a written guarantee that all work executed under the plans and these specifications will be free from defects of materials and workmanship for a period of one year from the date of final acceptance and that all defects occurring within that period shall be replaced at no cost to the owner.

(**a**) The contractor shall, in case of work performed by his subcontractors and where guarantees are required, secure warranties from said subcontractors and deliver them to the owner upon completion of the work.

(**b**) Where guarantees or warranties are written in any section for a period of more than one year, such longer terms shall apply.

(**c**) Nothing in the above shall be deemed to imply that this guarantee shall apply to work which has been abused or neglected by the owner.

(**d**) It is specifically understood that the terms of the guarantees called for in the specifications, the compliance therewith, and the fulfillment of all obligations thereunder are fully protected by the performance bond furnished by the general contractor.

E–08. Contractor's Right to Stop Work or Terminate Contract: Article 23 of the A. I. A. General Conditions is hereby deleted in its entirety and the following is substituted in lieu thereof:

"If the work should be stopped under an order of any court, or other public authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, or if the Architect should fail to issue any certificate for payment within fourteen days after it is due, or if the Owner should fail to pay to the Contractor within fourteen days of its maturity and presentation any sum certified by the Architect or awarded by arbitrators, then the Contractor may, upon seven days' written notice to the Owner and the Architect, stop work or terminate this contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages."

E–09. Applications for Payments: Article 24 of the A. I. A. General Conditions is amended by the addition of the provision that:

The Contractor shall furnish the initial breakdown on a form to be furnished by the Owner with the complete breakdown of the contract price so arranged and itemized as to meet the approval of the Owner.

E–10. Certificates for Payments: Article 25 of the A. I. A. General Conditions is amended by the addition of the following provisions:

> "Final payment shall be made by check payable jointly to the Contractor and Surety and shall be mailed to the Surety. Acceptance of the final payment shall operate as and shall be a release to the Building Authority from all claims of liability under the contract for anything done or furnished or relating to the work under this contract.
>
> "Payments will be made by the Owner to the Contractor on or about the 15th day of each month as follows: 90% of the value, based on contract prices, of labor and materials incorporated in the work and of materials suitably stored at the site thereof up to the first day of that month as estimated by the Architect, less the aggregate of previous payments. Final payment will be made 30 days after final completion and acceptance of the work."

E–11. Omitted.

E–12. Insurance: Articles 27, 28, and 29 of the A. I. A. General Conditions are deleted and the following substituted therefor:

(**a**) The General Contractor shall be responsible from the time of signing the contract or from the time of the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from this work to persons or property regardless of who may be the owner of the property. In addition to the liability imposed upon the Contractor on account of personal injury (including death) or property damage suffered through the Contractor's negligence, which liability is not impaired or otherwise affected hereby, the Contractor assumes the obligation to save the Owner harmless and to indemnify the Owner from every expense, liability or payment arising out of or through injury (including death) to any person or persons or damage to property (regardless of who may be the owner of the property) of any place in which work is located arising out of or suffered through any act or omission of the Contractor or any subcontractor, or anyone either—

1. directly or indirectly employed by or

2. under the supervision of any of them in the prosecution of the work included in this contract.

(**b**) The contractor agrees to comply with the provisions of the Workmen's Compensation Laws of the State in which this work is performed and to require all subcontractors likewise to comply. It shall be stated on every policy or certificate of insurance, as the case may be, that "The insurance company agrees that Policy No. ______ shall not be cancelled, changed, or allowed to lapse until ten days after the State School Building Authority, Room 408, 20 Ivy Street, S. E., Atlanta, Georgia, has received written notice as evidenced by return receipt of registered letter, and it is agreed further that as to lapsing such notice will not be valid if mailed more than fifteen days prior to the expiration date shown on this policy."

(**c**) The contractor agrees that, prior to the beginning of any work by the Contractor or any subcontractor, as the case may be, he (the contractor) will furnish the following to the owner for himself and for each subcontractor:

Certificate from insurance company showing issuance of workmen's compensation coverage for the State of Georgia or a certificate from Georgia Workmen's Compensation Board showing proof of ability to pay compensation directly.

(**d**) The contractor further shall maintain such other insurance (with limits as shown below) as shall protect the contractor and owner from any claims for property damage or personal injury, including death, which may arise out of operations under this contract, and the contractor shall furnish the owner certificates and policies of such insurance (as shown below).

(**e**) Below is listed the additional insurance coverage which must be procured by the contractor at his own expense. The contractor agrees to follow the instructions indicated in each case:

1. OWNER'S PROTECTIVE LIABILITY INSURANCE—taken out in name of the State School Building Authority as insured.

Personal injury, including death—limits of $100,000 for each person and $300,000 for each accident.

Property damage—limits of $50,000 for each accident and $100,000 for the aggregate of operations.

DISPOSITION: Original policy must be deposited with Owner prior to commencement of work.

2. CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE—taken out in the name of the Contractor.

Personal injury including death—limits of $100,000 for each person and $300,000 for each accident.

Property damage—limits of $50,000 for each accident and $100,000 for the aggregate of operations.

DISPOSITION: Certificate of insurance must be sent to Owner prior to commencement of work.

2a. CONTRACTOR'S PUBLIC LIABILITY INSURANCE—taken out in the name of the Contractor.

Personal injury, including death—limits of $100,000 for each person and $300,000 for each accident.

Property damage—limits of $50,000 for each accident and $100,000 for the aggregate of operations.

DISPOSITION: Certificate of insurance must be sent to Owner prior to commencement of work.

3. BUILDER'S RISK INSURANCE—payable to the Contractor and Owner, as their interests may appear, upon the entire structure and upon all materials in or adjacent thereto which are to be made a part of the insured structure to 100% of the insurable value thereof covering fire, extended coverage, vandalism and malicious mischief.

DISPOSITION: Policy to be deposited with Owner prior to commencement of work.

No insurance will be acceptable unless written by a company licensed by the State Insurance Department to do business in Georgia at the time the policy is issued, and the company must in addition be acceptable to the Owner.

E–13. **Mutual Responsibility of Contractors:** Article 34 of the A. I. A. General Conditions is deleted and the following is substituted in lieu thereof:

> Should the Contractor cause damage to any separate contractor on the work the Contractor agrees, upon due notice, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall defend such proceedings at his own expense and, if any judgment against the Owner arise therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

E–14. **Separate Contracts:** Article 35 of the A. I. A. General Conditions is amended by the addition of the following provision:

> When the work has been substantially completed and the architect determines that no inconvenience will be suffered by the contractor, the owner will be permitted to deliver loose furniture and other equipment to the building.

E–15. **Subcontracts:** Article 36 of the A. I. A. General Conditions is amended by the addition of the following paragraphs:

> As soon as possible after notice of award and in any event not later than three days prior to the time set for execution of the A. I. A. Form of Agreement, the Contractor shall furnish the names of the subcontractors he will use on the work. The furnishing of such names shall not affect the authority of the Architect under Article 36 to reject any subcontractor as incompetent or unfit and there shall be no claim against the Owner for adjustment in the contract sum on account of such rejection.
>
> The Contractor shall not employ any subcontractor that the Architect may within a reasonable time object to as incompetent or unfit or that the Owner may object to on the ground that the record of the subcontractor on other work of the Owner has not, in the opinion of the Owner, been satisfactory.

E–16. Omitted.

E–17. **Existing Conditions:** The Contractor, in undertaking the work under this contract, is assumed to have visited the premises and to have taken into consideration all conditions which might affect his work. No consideration will be given any claim based on lack of knowledge of existing conditions except where the contract documents make definite provision for adjustment of cost or extension of time due to existing conditions which cannot be readily ascertained. (See Paragraph E–05 (c).)

E–18. **Measurements and Dimensions:** Before ordering material or doing work which is dependent for proper size of installation upon coordination with building conditions, the Contractor shall verify all dimensions by taking measurements at the building and shall be responsible for the correctness of same. No consideration will be given to any claim based on differences between the actual dimensions and those indicated on the drawings. Any discrepancies between the drawings and/or the specifications and the existing conditions shall be referred to the Architect for adjustment before any work affected thereby is begun.

E–19. Specification Arrangement: The Specifications are separated into numbered and titled divisions for convenience of reference. Neither the owner nor the architect assumes any responsibility for defining the limits of any subcontracts on account of the arrangement of the specifications. Notwithstanding the appearance of such language in the various divisions of the specifications as, "The Plumbing Contractor," "The Electrical Contractor," "The Roofing Contractor," **etc.**, the general contractor is responsible to the owner for the entire contract and the execution of all of the work referred to in the contract documents.

E–20. Commencement, Prosecution, and Completion: The contractor will be required to commence work under this contract within ten days after date of written notice from the owner to proceed, to prosecute the work with faithfulness and energy and to complete the work within the time stipulated in the proposal form. Commencement of work shall mean actual physical work on the site.

E–21. Alternates: All alternate bids are deductive. No alternate bids will be taken unless the base bid exceeds the amount of money available for the project, and any alternate, or alternates, if taken, will be taken in numerical sequence.

E–22. Cooperation: The general contractor and all subcontractors shall cooperate with one another and with other contractors doing related work, and shall coordinate their work with the work of other trades and other contractors so as to facilitate the general progress of the work. Each trade shall afford all other trades and all other contractors every reasonable opportunity for the installation of their work and for the storage of their materials.

E–23. Discrepancies: The following principles shall govern the settlement of disputes which may arise over discrepancies in the contract documents: (**a**) as between figures given on drawings and the scaled measurements, the figures shall govern; (**b**) as between large-scale drawings and small-scale drawings, the larger scale shall govern; (**c**) as between drawings and specifications, the requirements of the specifications shall govern; and (**d**) as between the Form of Agreement and the specifications, the requirements of the Form of Agreement shall govern. Discrepancies noted shall be reported to the architect. The principles set forth herein shall not alter provisions of Article 2 of the A. I. A. General Conditions.

E–24. Progress Reports: When requested by the architect, the contractor shall furnish such reports as are reasonably desirable as to the progress, condition of the job, and anticipated schedule of completing the various phases of the work.

E–25. Office for Resident Engineer Inspector: The contractor shall provide a temporary office at the site of the work for the use of the resident engineer inspector. The office shall be weather-tight and shall be provided with heat, electric lights, telephone extension, and adequate windows. The contractor shall also provide plan table and rack, chair, legal size fiber transfer file with fifty (50) manila folders for the permanent records, and use of such business machines as may be necessary for the resident engineer inspector's duties.

E–26. Affidavits: Before acceptance of work, the contractor will be required to furnish Non-Influence Affidavit and Statutory Affidavit in duplicate in the exact form as shown on the following pages.

NON-INFLUENCE AFFIDAVIT

COUNTY OF__________________________________

STATE ______________________________________

I do solemnly swear on my oath that as to the contract dated ____________________, 195__, between ____________________________________ and the State School Building Authority I have no knowledge of the exertion of any influence or the attempted exertion of any influence on the firm on behalf of which this affidavit is made in any way, manner, or form in the purchase of materials, equipment, or other items involved in the construction, manufacture or employment of labor under the aforesaid contract, by any member of the State School Building Authority or any employee of the State School Building Authority or any member of the State Board of Education or any employee of the State Board of Education, or any member of the Local Board of Education, or any employee of the Local Board of Education, or any person connected with the State Government of Georgia in any way whatsoever.

This ____________________________________ day of ____________________________________, 195__.

______________________________________ (L. S.)
Signature

____
Title

____
Firm

County of ____________________________________

State of _____________________________________

Personally before me, the undersigned authority, appeared ______________________, who is known to me to be an official of the firm of __________________________, who, after being duly sworn, stated on his oath that he had read the above statement and that the same is true and correct.

____
Notary Public

My commission expires _________________________,

This __________________________ day of ____, 195__.

(Form 5B–15)
(June 1, 1954)

STATUTORY AFFIDAVIT

STATE OF GEORGIA, COUNTY OF ______________________________

FROM: ______________________________
(Contractor)

TO: State School Building Authority, Owner

RE: Contract entered into the ____________ day of ______________, 195__,
between the above-mentioned parties for the construction of a ______________________________

____

at ______________________________

KNOW ALL MEN BY THESE PRESENTS:

1. The undersigned hereby certifies that all work required under the above contract has been performed in accordance with the terms thereof, that all materialmen, subcontractors, mechanics, and laborers have been paid and satisfied in full and that there are no outstanding claims of any character arising out of the performance of the contract which have not been paid and satisfied in full.

2. The undersigned further certifies that to the best of his knowledge and belief there are no unsatisfied claims for damages resulting from injury or death to any employees, subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for any other damage of any kind, nature, or description which might constitute a lien upon the property of the Owner.

3. The undersigned makes this affidavit as provided by law and for the purpose of receiving final payment in full settlement of all claims arising under or by virtue of the contract, and acceptance of such payment is acknowledged as a release of the Owner from any and all claims arising under or by virtue of the contract.

IN WITNESS WHEREOF, the undersigned has signed and sealed this instrument this ____________

day of ______________________, 195__.

____

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____

Personally appeared before the undersigned, ______________________________ and ______________________________ who after being duly sworn, depose(s) and say(s) that the facts stated in the above affidavit are true.

____
Notary Public

______________________ County, Georgia.

This ______________________ day of ______________________, 195__.

My commission expires ______________________.

(Form 5B–16)
(June 1, 1954)

E–27. Protection of Work and Property: The first paragraph of Article 12 of the A. I. A. General Conditions is deleted and the following is substituted therefor:

> The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect all other property from damage, injury, or loss arising in connection with this work regardless of who may be the owner of said property. He shall adequately protect all property from damage as provided by law and as provided in Article E–12 of the General Conditions, regardless of who may be the owner of such property. (See also Articles E–04 and E–12.)

E–28. Performance Bond and Payment Bond: The Contractor will be required to furnish both a performance bond and a payment bond (A. I. A. Form 107) which have been altered as follows:

(a) Performance Bond

1. Delete first three lines of second paragraph on page 2 reading as follows:

> Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly

and substitute in lieu thereof the following:

> Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Surety may promptly remedy the default, or shall promptly

2. Delete last paragraph on page 2 reading as follows:

> No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner, named herein or the heirs, executors, administrators or successors of Owner.

and substitute in lieu thereof the following:

> No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner, its successors or assigns.

(b) Payment Bond

1. Delete first four lines of paragraph 3(a) on page 2 reading as follows:

> (a) Unless claimant shall have given written notice to any two of the following: The Principal, the Owner, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the . . .

and substitute in lieu thereof the following:

> (a) Unless claimant shall have given written notice to any two of the following: The Principal, the Owner, or the Surety above named stating with substantial accuracy the amount claimed and the name of the party to whom the . . .

2. Delete paragraph 3(c) on page 2.

3. Delete paragraph 4 on page 2.

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SCOPE OF THE WORK

This work includes the construction of the New Athens High School Addition located in Athens, Clarke County, Georgia, for the State School Building Authority, all as covered herein and/or covered on the Drawings.

This work includes taking the Site at the Athens Senior High School and executing the grading, yard work, all as shown on Plot Plan.

In addition to the customary construction work, this work includes certain alterations to the existing school as shown on the Working Drawings.

This work shall be carried on so as to cause no unnecessary disturbance to school work in the High School.

ALTERNATES

Bidders are requested to include figures on all Alternates in the Proposal Form. If accepted in closing a contract, they will become a part thereof. No alternate bids will be taken unless the Base Bid exceeds the amount of money available for the project, and any Alternate, or Alternates, if taken, will be taken in numerical sequence. The Contractor shall agree to hold the Alternate Prices firm for at least 30 days after the signing of a contract.

EXCAVATING AND GRADING

GENERAL: The Contractor is to take the site in its present condition, do all grubbing, grading, excavating, trenching, filling and back-filling necessary for the execution of the construction and for the securing of the new grades shown on the Drawings.

CLEARING: Remove completely, whether shown on Drawings or not, all trees, shrubs and stumps from all areas to be covered with the building, drives, walks, and from excavated and filled areas except as otherwise noted and as shown on the Plot Plan. All existing trees on undisturbed ground, and others as may be noted on the Plot Plan shall remain and be boxed and protected from the construction and grading operations.

TOP SOIL: The Contractor is to strip and stock-pile all topsoil from those areas which are graded and/or filled by these operations. This topsoil to be distributed as covered under LAWN PREPARATION AND PLANTING WORK Section of this Specification.

EXCAVATING: Excavate to elevations and dimensions indicated, plus sufficient space to permit erection of forms, shoring, waterproofing, masonry and inspection of foundations. Furnish and erect all shoring, etc., where necessary to hold sides of excavations. Protect bottom of excavation from frost and do not place foundations, footings or slabs on frozen ground.

Excavation for footings and trenches may be cut to accurate size and side forms omitted, if concrete is poured in clean cut trenches without cave-ins.

The Architect must be notified when the footing trenches have been dug to the depth indicated on the drawings, so that he may inspect them before any concrete is poured.

If, at the depths indicated, it is decided that the soil is unsuitable for the footings, the Contractor shall go deeper to firm, solid ground; or spread the footings as the Architect may direct.

Should additional soil tests be found advisable, these shall be made upon a time and material basis when so authorized by the Architect in writing.

Rock excavation shall be defined as any stone or boulders that cannot be removed by a power shovel, 1/2 cu. yd. bucket capacity, without use of drills or explosives.

Where explosives are used, work shall be done by experienced powder-men using small charges and in strict accordance with all regulations governing same. Any damage to foundations or otherwise caused by improper use of explosives shall be corrected at the Contractor's expense.

Water shall not be allowed to stand in excavated areas; and all loose dirt or rubbish must be removed before pouring the concrete footings. Bottoms of all footing excavations shall be true and level and, where changes in levels are necessary, shall be stepped. Such steps shall be done so as to work masonry courses.

Material to be excavated is assumed to be earth and materials that can be removed with power shovel. If rock as defined above is encountered within limits of the required excavation, adjustments will be made in contract on an equitable basis. However, the Contractor shall immediately notify the Architect if rock is encountered, and shall not proceed further until instructions are given and measurements made for purpose of estimating volume of rock to be excavated.

SURPLUS EXCAVATED EARTH AND ROCK: Surplus excavated earth and rock which cannot be located on the building property must be disposed of elsewhere.

FILL AND BACKFILL: Remove debris from excavations before backfilling, do not backfill against foundation walls until approved by the Architect. Backfilling shall be free from plaster, batts and other debris. Backfill both sides of all walls, except as otherwise indicated.

Deposit fill and backfill in layers not exceeding 8" under concrete floor slabs. Compact each layer with pneumatic tampers or by other approved mechanical means after a light sprinkling with water. The fills to be thoroughly compacted and finished to required elevation to receive gravel furnished under the Concrete Section of these Specifications.

GRADING: Do all grading to bring the area outside the building to the finish elevations called for on the Plot Plan. Grades not otherwise indicated shall be uniformly leveled or sloped between points where elevations are given, or between such points and existing finish grades.

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CONCRETE - PLAIN AND REINFORCED

GENERAL: Hot Weather Precautions: During dry, hot weather (above 80° F) aggregate stock piles should be kept cool and continuously saturated by sprinkling. One-half gallon of water should be deducted from the design mix to allow for this surface water.

Hot Forms should be cooled by prewetting.

Protect slabs from Sun.

Protect newly made cylinders from sun and wind. Moist curing should start as soon as possible.

Entrained air should be kept within specified limits.

Portland Cement shall conform to the "Standard Specifications for Portland Cement" (A.S.T.M. Designation: C-150), or to the "Tentative Specifications for Air-Entraining Portland Cement" (A.S.T.M. Designation: C 175). The recommended types of cement are: Type 1, or 1-A ("A for "Air-Entrained"), to be used for general concrete construction, and Type 111 or 111-A, to be used when high-early strength is required.

Concrete Aggregates shall conform to the "Standard Specifications for Concrete Aggregates" (A. S. T. M. Designation: C 33), or if lightweight aggregates are specified, to the "Standard Specifications for Lightweight Aggregates for Concrete" (A.S.T.M. Designation: C 130), except that aggregates which fail to meet these specifications, but which have been shown by special test or actual service to produce concrete of the required quality may be used, provided such use is authorized in writing by the Architect.

METAL REINFORCEMENT: Reinforcing bars shall conform to the requirements of the "Standard Specifications for Billet-Steel Bars for Concrete Reinforcement" (A. S. T. M. Designation: A 15), or "Standard Specifications for Rail-Steel Bars for Concrete Reinforcement" (A.S.T.M. Designation: A 16), or "Standard Specifications for Axle Steel Bars for Concrete Reinforcement" (A.S.T.M. Designation: A 160); also of the "Standard Specifications for Minimum Requirements for the Deformations of Deformed Steel Bars for Concrete Reinforcement" (A. S. T. M. Designation: A 305.)

Welded wire-fabric or cold-drawn wire for concrete reinforcement shall conform to the requirements of the "Standard Specifications for Cold Drawn Steel Wire for Concrete Reinforcement" (A. S. T. M. Designation: A 82) or "Standard Specifications for Welded Steel Wire Fabric for Concrete Reinforcement" (A. S. T. M. Designation: A 185).

The Contractor shall prepare and submit, in quadruplicate, to the Architect placing plans, bending details, and bar lists covering all reinforcing steel supplied under the contract. All dimensions necessary for the checking of the reinforcing details shall be shown on shop drawings. Also all details and notes on the contract drawings giving information for the placing of reinforcing steel shall be shown on the shop drawings. Shop Drawings will not be approved without such information.

CONCRETE QUALITY:

Laboratory Design and Tests of Concrete: A recognized Testing Laboratory, approved by the Architect, shall be selected by the Contractor to design the mix, or mixes, of the concrete to be used on the project, and to test the compression specimens made during the placing of the concrete. The cost of these services shall be paid for by the Contractor. Copies of all mix designs and the results of all tests shall be furnished, in triplicate, to the Architect.

The Contractor shall furnish to the designated Testing Laboratory samples of the materials to be used on the project, in quantities of at least 1 cu. ft. each, to determine the mix design. The Contractor shall also furnish specimens to determine the strength of the concrete, or cooperate with the Owner's representatives in securing such specimens. There shall be not less than three specimens for each one hundred cubic yards, or less, of concrete of each class placed in any one day.

Proportioning of the Materials: The proportions of cement, aggregate, and water in the mix shall be such as to produce a plastic and workable mass suitable for economical and uniform placement. When dropped from the discharge chute, the concrete mass should flatten out at the center and spread out slowly at the edges. The slump of the mass shall not exceed 6 inches, nor shall it exceed 4 inches when the vibration equipment is used. Excessive fluidity, which may result in the segregation of the materials, should be avoided. The mortar should show no free water and should cling to the coarse aggregate.

The upper layer of the set concrete shall be free from laitance, i. e., diluted paste.

The water-cement ratio of the mix shall be based on the established relationships between the water-cement ratio and the strength of concrete, and shall be such as to produce the required strength of the concrete with the least amount of water consistent with the workability of the fresh concrete. Unless an exception is granted by the Architect, the amount of cement in a cubic yard of concrete shall not be less than 5½ sacks, and the amount of water, per sack of cement, shall not exceed 6½ gallons. Surface water contained in the aggregate shall be included as part of the mixing water in computing the water content.

For thin and heavily reinforced members the mix may be made more fluid by increasing the ratio of the fine to the coarse aggregate, or by increasing the amount of the cement paste in the mix, but not by increasing the amount of water.

All concrete materials shall be measured by weight upon devices approved by the Architect, so that the proportions can be accurately controlled and checked during the work. Measurement of materials for ready mixed concrete shall conform to the "Standard Specifications for Ready Mixed Concrete" (A. S. T. M. Designation: C 94). Portland Cement in standard unopened paper sacks as packed by the manufacturers, may be considered to weigh 94 lb. per sack.

The use of admixtures, other than air-entraining agents, is specifically prohibited without ehe written approval of the Architest.

Compressive Strength: Compression test specimens shall be made and cured in accordance with the "Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field" (A. S. T. M. Designation: C 31). They shall be tested in accordance with the "Standard Method of Test for Compressive Strength of Molded Concrete Cylinders" (A. S. T. M. Designation: C 39).

The standard age of test shall be 7 and 28 days. The minimum compressive strength of the specimen cylinders at 28 days shall be 2500 lb. per sq. in. for footings and foundations and slabs on ground, and 3000 lb. per sq. in. for other parts of the work.

If the compression specimens begin to exhibit a consistent decrease of strength, an investigation shall be made to determine the cause of the decrease. If it is attributed to a change in the materials, a new design of the mix shall be made. If the low strength of the specimens puts the strength and quality of the structure in question, the Architect may require, at no additional cost to the Owner, tests in accordance with the "Standard Methods of Securing, Preparing and Testing Specimens of Hardened Concrete for Compressive and Flexural Strengths" (A. S. T. M. Designation: C 42) or order load tests in accordance with Section 202, Chapter 2 of the A. C. I. Building Code, to be made on the portions of the structure containing questionable concrete. Suitable appliances and methods for loading and measuring shall be provided by the Contractor. The portions of the structure which are found by the Architect to contain defective concrete shall be removed and reconstructed in a satisfactory manner at the Contractor's expense.

MIXING OF CONCRETE: The concrete shall be mixed until there is a uniform distribution of the materials. It shall be discharged completely before the mixer is recharged. The mixer shall be rotated at a speed recommended by the manufacturer, and mixing shall be continued for at least 1 minute after all materials are in the mixer.

Ready mixed concrete shall be mixed and delivered in accordance with the requirements set forth in the "Standard Specifications for "Ready-Mixed Concrete" (A. S. T. M. Designation: C 94).

PLACING OF CONCRETE: The Contractor shall give the Architect or Inspector sufficient advance notice before starting to place concrete in any portion of the structure to permit inspection of the forms. An authorization of the Architect shall be secured before concrete is placed. Any concrete placed in violation of this provision shall be removed, and shall be replaced by new concrete, if the Architect so orders.

Before depositing concrete, water and debris shall be removed from the place of the deposit. Any reinforcement and forms coated with foreign material or with concrete from previous placing operations shall be thoroughly cleaned.

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the space between the bars. No concrete that has partially hardened or been contaminated by foreign material shall be deposited on the work, nor shall retempered concrete be used.

When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. The top surface shall be generally level. If a section cannot be placed continuously, construction joints shall be located at points provided for in the drawings or approved by the Architect.

All concrete shall be thoroughly compacted by suitable means during the operation of placing, and shall be thoroughly worked around reinforcement and embedded fixtures and into the corners of the forms. Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar containing the same proportion of cement to sand as used in the concrete shall first be deposited in the forms.

At least two hours shall elapse after depositing concrete in columns or walls before depositing concrete in the floor system. The finished level of concrete in any vertical member shall be not more than 1 inch below the design height of the member.

CURING: Provisions shall be made for maintaining concrete in a moist condition for at least 5 days after the placement of the concrete, except that for high-early strength concretes, moist curing shall be provided for at least the first two days.

Concrete shall be kept moist by any one, or any combination, of the following methods: (1) Leaving forms in place a minimum of 7 days, (2) spraying with water or ponding, (3) using moisture retaining covers, and (4) applying a sealing coat of liquid curing compound approved by the Architect.

The spraying water shall be applied on unformed surfaces within one hour after the concrete is placed, and on formed surfaces immediately after the forms are stripped, and the spraying shall be continuous. The moisture retaining cover or the sealing curing compound shall be applied on unformed surfaces immediately after the concrete is finished. If there is any delay, the concrete shall be kept moist until the application is made. If the surfaces are formed, the forms shall be removed and the concrete sprayed lightly with water before the cover or the sealing compound is applied.

COLD WEATHER REQUIREMENTS: Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials or materials containing ice shall be used.

All concrete materials and all reinforcement, forms, fillers and ground with which the concrete is to come in contact shall be free from frost. Whenever the temperature of the surrounding air is below 40 deg. F. all concrete placed in the forms shall have a temperature of between 70 deg. F. and 80 deg. F., and adequate means shall be provided for maintaining its temperature not less than 70 deg. F. for 3 days or 50 deg. F. for 5 days except that when high-early strength concrete is used the temperature shall be maintained at not less than 70 deg. F. for 2 days or 50 deg. F. for 3 days or for as much more time as is necessary to insure proper curing of the concrete. The housing, covering or other protection used in connection with curing shall remain in place and intact at least 24 hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for the prevention of freezing. Manure will not be allowed.

FORMS AND DETAILS OF CONSTRUCTION:

Design of Forms: Forms shall conform to the shape, lines and dimensions of the members as called for on the plans, and shall be substantial and sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied together so as to maintain position and shape. Forms for members supported at both ends shall be cambered 1/4" for each 10'-0" of span. Forms for cantilevered members shall be elevated at the outer end of span 3/4" for each 10'-0" of span.

Removal of Forms: Forms shall be removed in such a manner as to insure the complete safety of the structure. Where the structure as a whole is supported on shores, and removable floor forms, beams and girder sides, column and similar vertical forms may be removed after 24 hours, providing the concrete is sufficiently hard not to be injured thereby. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon.

Cleaning and Bending Reinforcement: Metal reinforcement, at the time concrete is placed, shall be free from rust, scale or other coatings that will destroy or reduce the bond. Bends for stirrups and ties shall be made around a pin having a diameter not less than two times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum thickness of the bar, except that for bars larger than 1" the pin shall be not less than eight times the minimum thickness of the bar. All bars shall be bent cold.

Placing Reinforcement: Metal reinforcement shall be accurately placed in the forms in accordance with the plans and shall be adequately secured in position by metal chairs and spacers. Reinforcing steel delivered to the job and not immediately placed in the forms shall be placed in racks, or on other supports at least eighteen (18) inches above the ground.

Splices and Offsets in Reinforcement: In slabs, beams and girders, splices of reinforcement at points of maximum stress shall generally be avoided. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear.

Where changes in the cross section of a column occur, the longitudinal bars shall be offset in a region where lateral support is afforded. Where offset, the slope of the inclined portion shall not be more than 1 in 6, and in the case of tied columns the ties shall be spaced not more than 3 in. on centers for a distance of 1 ft. below the actual point of offset.

Concrete Protection for Reinforcement: The metal reinforcement shall be protected by the thickness of the concrete indicated in the plans. Where not otherwise shown, the thickness of concrete over the reinforcement shall be as follows:

Where concrete is deposited against ground without the use of forms, not less than 3 in.

Where concrete is exposed to the weather, or exposed to the ground but placed in forms, not less than 2 in. for bars more than 5/8 in. in diameter and 1½ in. for bars 5/8 in. or less in diameter.

In slabs and walls not exposed to the ground or to the weather, not less than 3/4 in.

In beams, girders and columns not exposed to the ground or to the weather, not less than 1½ in.

In all cases the thickness of concrete over the reinforcement shall be at least equal to the diameter of round bars and one and one-half times the side dimension of square bars.

Exposed reinforcement bars intended for bonding with future extensions shall be protected from corrosion by concrete or other adequate covering.

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Construction Joints: Joints not indicated on the Plans shall be so made and located as to least impair the strength of the structure. Where a joint is to be made, the surface of the concrete shall be thoroughly cleaned and all laitance removed. In addition, vertical joints shall be thoroughly wet and slushed with a coat of neat cement grout immediately before the placing of new concrete.

Construction joints in floor shall be located near the middle of the spans of slabs, beams or girders, unless a beam intersects a girder at this point, in which case the joints in the girders shall be offset a distance equal to twice the width of the beam. In this last cast provision shall be made for shear by use of inclined reinforcement.

Concrete Finish: Exterior Walks and Drives - "Float" finish, without topping, when concrete is stiff enough to bring up minimum of moisture and fines. Tooled at joints and edges.

Concrete Canopies are to be as shown on the Drawings.

Floor Slabs: Self-supporting Floor Slabs shall be installed on Corruform Standard Weight corrugated steel base as manufactured by Granco Steel Products Company, Granite City, Illinois. Reinforcing to be as shown on Drawings.

LAPIDOLITH: All concrete floors that have no floor covering shall be given three coats of Sonneborn's "Lapidolith", applied in accordance with the Manufacturer's recommendations.

PRECAST LIGHTWEIGHT CONCRETE

SCOPE: All precast lightweight concrete lintels or beams detailed or noted on Plans.

MATERIALS: Aggregate to be of the same material as used and approved for concrete blocks under the MASON'S WORK Section of these Specifications. Reinforcing steel shall be in accordance with the steel specified under the CONCRETE Section of these Specifications.

DESIGN MIX: Mix Designs may be established and members precast in accordance with the block manufacturer's preference, subject to the following requirements:

The texture of the precast members must match the concrete block provided for this project.

The minimum compressive strength at 28 days shall be 1000 psi.

APPROVAL: Manufacturer shall submit a certificate or test data verifying he strength of the concrete mix.

Texture variations which in the judgement of the Architect will detract from the appearance of the building when finished, shall be a basis of rejecting these precast concrete members.

See Add #1-1
Bower

ROOF DECK

~~Where shown on drawings, roof areas shall be covered with Insulrock structural roof slabs laid in steel sub-purlins as herein specified.~~

~~MATERIALS: Insulrock Roof Slabs, 32" x 96" and 3" thick as manufactured by S. K. Insulrock Corporation, Linden, N. J.~~

~~Sub-purlins shall be bulb-tees of size shown on drawings and as manufactured by H. K. Porter Company, Inc., Buffalo Steel Division. Sub-purlins shall be furnished with a shop coat of paint.~~

~~Clips - Use Insulrock bulb-tee clips, minimum two per slab.~~

~~ERECTION: Bulb tees shall be accurately spaced 33" o. c. The ends of sub-purlins shall be weld on both sides to supports, at intermediate bearing weld flanges on alternate sides.~~

~~Roof slabs shall be laid in place between the bulb tees with ends butted tightly and resting on supports.~~

~~Fasten ends of slabs by means of Insulrock bulb tee clips.~~

~~Grout all longitudinal joints flush with top of roof plank with a mixture of 1 part Portland Cement to 4 Parts of stabilized Vermiculite or Perlite.~~

~~ROOF FILL: Obtain slope of roof by use of light weight fill and crickets composed of 1 part Portland Cement to 4 Parts of Stabilized Vermiculite or Perlite. The light weight fill shall be so installed as to provide surfaces suitable for application of bonded built-up roofing.~~

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MASON'S WORK

SCOPE: The Mason's Work is to include furnishing and setting of all face and common brick, structural tile, structural glazed tile, limestone, marble, etc., along with the setting of all built-in equipment, anchors, frames, through-wall flashing, etc.

IN GENERAL: All walls are to be constructed and backed-up as indicated on the Plans and Section Drawings. Note Through-Wall Flashing.

COMMON BRICK: Common Brick are to be all-hard brick, and no broken or soft brick are to be used.

FACE BRICK: All Face Brick shall match the Face Brick on Existing Athens Senior High School. Color range and texture shall be approved by Architect before shipment. Salmon, soft, warped, chipped, cracked or otherwise damaged brick will not be accepted.

STRUCTURAL TILE for interior partitions shall be First Grade hard burned clay or shale structural tile, free from warps, twists, cracks, or other defects. All tile carrying plaster shall be scored. Use smooth tile for painted, unplastered structural tile walls. Tile shall conform to A. S. T. M. Specifications for Structural Clay Non-load-bearing Tile.

All interior tile back-up shall be load bearing, all hard, first quality clay or shale tile, free of warps, cracks, and/or other defects which, in the opinion of the Architect, may impair the strength of the wall. Such tile must conform to A.S.T.M. Specifications on Structural Clay Load-bearing wall Tile, Grade LB X and shall comply with samples submitted to and approved by the Architect prior to shipment. This tile shall be of horizontal cell construction subject to the qualifications hereinafter mentioned. The construction of the tile shall effect a broken horizontal mortar joint and each tile shall have an integral hand grip for ease in handling and setting. Vertical cell load bearing tile will not be permitted.

Furnish all necessary fittings, closures, and special shapes required to construct the exterior walls and partitions as shown on the Plans. All doors and window openings to have closure units or they may be worked out in common brick. Open end tile filled with concrete will not be accepted.

MORTAR: Mortar for all Mason's Work shall consist of one part Bondo, M.M.M., or Brix-Mortar, and three parts Rollo, or other approved sand meeting all requirements, including grading of the same specified under CONCRETE WORK. Mortar for Limestone setting shall be guaranteed as non-staining.

SCAFFOLDING: The scaffolding required for the use of all trades, including that for the proper execution of the Mason's Work, shall be furnished and erected by the General Contractor.

WORKMANSHIP: Start all Mason's work on top of cleaned surfaces with a good bed of mortar. If it is so directed, all brick shall be thoroughly wetted before laying. The full thickness of the wall shall be built in one operation to permit proper bonding. Interior walls and large surfaces of exterior walls below grade shall be laid running bond, with header courses every sixth course for bond. In face work, brick shall be laid in Running Bond, with every brick of every sixth course tied to tile backing by means of brick anchors.

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The Mason shall lay out the lowest course of bonded face brick, making the head joints uniform, starting at corners with the proper corner layout and using chipped brick only at re-entrant angles, except the 6" starters for bond. Carry up the wall with all joints uniform and lines of head joints plumb. Evidence of violation of this requirement shall be grounds for rejection of entire wall. No mortar shall be permitted to connect through a bed joint in the hollow tile back-up of exterior walls.

Face Brick shall be laid in Flemish Bond with 3/8" joints, vertical joints to be raked 3/8" after tooling horizontal joints which are to be "weathered". All done with an aluminum or glass tool. All joints shall be tooled in one direction only to compress the face of the mortar and leave same smooth. Tooling must be positive, regular and uniform. All face brick must be back-tooled, at least three courses ahead of the back-up. Omission of such back-tooling will be cause of rejection of the wall effected.

A panel showing the color range of face brick, the size and finish of joints, etc., shall be laid up on the job and the Architect's approval thereof shall be obtained before any face work is laid.

Walls in rooms scheduled to be plastered or to have tile waiscotes shall have full flush cut joints. Where masonry walls are the interior finish wall, special care shall be exercised in laying these walls to keep the coursing and tooling of joints uniform. Tooling of joints shall be done with a 24" long "V" tool with curved ends. Tool joint in in all walls unless otherwise noted. Tool both vertical and horizontal joints unless otherwise noted.

All hollow tile shall be laid with mortar specified and, in the exterior walls, shall be laid as not to have any mortar in the center groove, which must be left open in order to effect a positively interrupted mortar joint to prevent capillary attraction through the wall. All head joints in the tile shall be kept absolutely full and tight.

The Mason shall leave chases for pipes and conduits wherever necessary and shall do all cutting and patching necessary to accommodate the work of other trades. Also provide for, and where necessary, building in all contiguous work of other trades.

Under bearing plates for steel beams, trusses and other major structural steel members, install bearings on 1" cement grout to allow for leveling.

Where vertical vent shafts occur in masonry, parge inside face of masonry as work is installed; parging to be as smooth as possible and free from excessive trowel marks.

Contractor shall install Projection Booth parts as shown on Drawings or as recommended by the Manufacturer of the Projection Machine Equipment to be purchased by the Owner, as instructed by the Architect.

STRUCTURAL GLAZED TILE: Structural Glazed Tile, where indicated for corridor walls, or other areas, shall be first quality Grade "A" Ceramic Structural Glazed Tile, as manufactured by Arketex Ceramic Corporation, Brazil, Indiana, in colors and finish as selected by the Architect.

The face size of the tile shall be 6T Series and in thickness as shown on the Drawings. Special shapes and fittings, including cove base, bull nose corners, jambs, caps, etc., shall be furnished where req'd.

Complete setting details and drawings shall be submitted to Architect by the Manufacturer for approval, prior to shipment of the material.

PROTECTION AND CLEANING: The face of all walls shall be left clean and free from mortar. All scaffolds shall be cleaned at the end of the working period. All exposed tops of walls shall be covered wherever work is not in progress. All finished work, including steps, sills, projecting courses, and corners, shall be thoroughly and adequately protected from any damage.

At completion of the Mason's Work all exposed brick must have been cleaned with a solution of muriatic acid not stronger than 5% applied with fiber brushes and thoroughly flushed clean with a hose under adequate pressure. In the use of acid, adequate protection must be given to all adjoining work of any trade. At completion of the building all masonry work shall be left clean, free of mortar or other stains, and in undamaged condition. Stone must at all time be kept free of mortar or other stains. Any mortar that falls on exposed faces during erection must be immediately removed with a clean sponge and water.

CONCRETE MASONRY UNIT: ASTM Specification C90-44 for load bearing type and C 129-39 for non-load bearing type; use non-load bearing units for interior non-bearing partitions and use load bearing units for all other locations. Units shall be free from iron and other substances that will stain paint. Aggregate for block shall be "Superock" or approved equal. Sizes shall be as required by the drawings. No chipped face will be permitted on exposed surfaces of walls or partitions.

Furnish all necessary fittings, closures, and special shapes required to construct the exterior walls and partitions as shown on the plans. All door and window openings to have closure units. Open end tile filled with concrete will not be accepted.

All precast lightweight concrete lintels or beams detailed or noted on plans to be same aggregate used for approved concrete block required under this section of the specifications. Reinforcing steel shall be in accordance with the steel specified under CONCRETE Section of these Specifications.

Mix design may be established by Concrete Block Manufacturer, subject to the following requirements:

A. The minimum compressive strength at 28 days shall be 1000 psi.

B. Manufacturer shall submit certificates of test data verifying the strength of concrete mix.

LIMESTONE

WORK: The work under this heading shall include all labor and materials for Cut Stone in accordance with the Drawings and as hereinafter specified.

DESCRIPTION OF STONE: All Cut Stone shall be first quality Standard Buff Indiana Limestone building stock, free from all defects that would materially impair its strength, durability or appearance, and within the range of variation of color and texture, represented by two samples approved by the Architect. Stone shall be sufficiently aged to provide for hard stone suitable for shipping and handling.

All such stone to be from a Quarry the product of which has been tested at the U. S. Bureau of Standards for physical properties and weathering with satisfactory results.

SAMPLES: The Contractor shall submit to the Architect two samples which shall be typical of the extremes which the Contractor proposes to furnish. Samples to be about 3" wide by 7" long by 1" thick, the finish specified to be indicated on the large faces and at least two of the edges to be rock face.

All samples shall be labeled or otherwise clearly marked with the grade of the Limestone, the name of the Contractor submitting them, and with the name of the work for which it is proposed.

STANDARD PRACTICE: Standard Practice shall govern, except where this is in direct conflict with the specific intent of the Architect's detail drawings. Bidders not familiar with these standards relating to the grading, cutting, setting, and anchorage practice, etc., are cautioned to inform themselves regarding them.

The Architect reserves the right to approve the Sub-Contractors for both the cutting and setting of the stone, before this portion of the work is awarded.

CUTTING AND SETTING DRAWINGS: The Cut Stone Contractor shall prepare and submit to the Architect for approval, complete cutting and setting drawings, in triplicate, for all of the Limestone Work under this contract and no stone shall be cut until these drawings are approved by the Architect. Such drawings shall show in detail the sizes, sections and dimensions of stone, the arrangement of joints and bonding, anchoring and other necessary details.

These drawings shall be based upon and follow the drawings and details prepared by the Architect, except where it is agreed in writing that changes be made. Each stone indicated on these drawings shall bear the corresponding number marked on the back of bed with a non-staining paint.

BONDING AND ANCHORAGE: All projecting stones, except where otherwise shown as anchored to the structure and so provided by details or setting drawings, shall have beds in the wall at least one inch greater in depth than their maximum projection.

Moulded projecting courses, unless shown as secured by suitable anchorage or steel supports, shall have not less than four-sevenths (4/7) of their cubic contents inside the face of the wall. There shall be "through" or bond stones wherever indicated on the Architect's and the approved Cut Stone Drawings.

Provision for the proper anchoring, dowelling and cramping of work, in keeping with standard practice, also for the support of stone by shelf angles and loose steel, etc., when required, shall be clearly indicated on the setting drawings.

DETAILS FOR LINTELS: Except where steel angles occur, all stone lintels, architraves and other members spanning openings, whether supporting a superimposed load or ohly their own weight, shall be of the proportions and sectional area that will provide an ample factor of safety based on the average ultimate breaking strength of the stone specified.

CUTTING: All stone shall be cut accurately to shape and dimensions and full to the square with jointing as shown on the Architect's drawings. All exposed faces shall be cut true. Beds and all joints shall be dressed straight and at right angles to the face, unless otherwise shown, or noted on the drawings, the joints shall have a uniform thickness of 1/4". Stone is to be sawed with the grain, in order to set all grain uniformly parallel to face of wall.

The patching and hiding of defects will not be permitted.

Washes shall be as deep as practicable and drips of sufficient width and depth to shed water shall be provided on all projecting stone and courses unless otherwise shown.

Raglets for flashing, etc., shall be cut in the stone where so indicated on the Drawings.

Moulded work shall be carefully executed from full size details approved by the Architect and must match perfectly at joints. All arrises shall be sharp and true.

Corner, pier and pilaster stone shall be checked at back as and where indicated. Check projecting stone for downspouts.

BACK CHECKING AND FITTING TO STRUCTURAL FRAME: Stone coming in contact with structural work shall be back-checked if so indicated on the general drawings, and where shown resting on structural work shall have beds shaped to fit the supports.

LEWIS HOLES AND CUTTING FOR DOWELS, ANCHORS, CRAMPS, ETC.: Holes and sinkage shall be cut in stones for all anchors, cramps, dowels, etc., called for under this Specification or indicated on the Drawings.

Lewis holes shall be cut in all stone weighing more than 100 lbs. No Lewis or other holes shall be cut in exposed washes or come closer than 3 inches to the exposed face of the stone.

CUTTING AND DRILLING FOR OTHER TRADES: This Contractor shall do all cutting and drilling of stone for electric conduits, piping, downspouts, etc., required for the installation of the work of other trades, as shown on the Drawings.

LOADING AND SHIPMENT: The Limestone shall be carefully packed for rail transportation, with exercise of all reasonable and customary precautions against damage in transit.

All stone under this contract shall be delivered promptly as ordered and in the sequence in which it is to be set.

DELIVERY AND STORAGE: All Limestone shall be delivered F. O. B. cars at destination under this contract and shall be carefully unloaded and delivered to the building site.

The stone shall be handled throughout by competent workmen and by such methods as will guard against soiling, mutilation or chipping in transit to and upon delivery at the building site.

The stone shall be stored at the building site on planking so set that the stone will rest entirely clear of the ground and be protected, by proper means, from damage to arrises and from contact with anything which would result in the accumulation of dirt, dust, soot, mud, grease and other staining or disfiguring elements. The stone shall be covered with tarpaulin, stout non-staining paper, boards, etc., during extended periods of storage on building site.

Where Limestone is stored on the site, that area is to be covered with at least 1" of clean washed sand extending 5 feet beyond the stored stone. As soon as stone is set in the wall at the ground level, the ground shall be filled in and an area extending 4 feet from the building, shall be covered with 2 inches of the same sand for protection of the stone.

This sand protection shall be properly maintained through the construction of the building and then removed from the premises. Failure to properly protect stone resulting in damage may cause rejection.

SETTING MORTAR: All Limestone shall be set in carefully prepared mortar specified above under MASON'S WORK Mortar must be non-staining.

SCAFFOLDING: The scaffolding required for the use of all trades, including scaffold for the proper execution of the Cut Stone Work, will be furnished and erected by the General Contractor, and on the outside of the building.

ANCHORS AND DOWELS: All anchors, cramps, Lewis Anchors, etc., required by setting drawings or necessary for the proper erection of the work shall be included under stone setting contract. Except where otherwise indicated, all anchors shall be of iron, throughly galvanized after they have been bent to shape.

Anchors for ashlar and face work generally shall be 3/16" x 1" ashlar anchor, or be of equivalent cross section, one anchor to each stone over one-half square foot in area and at least two anchors to all stone over 2'-0" long or more than 3 square feet in superficial area. Length and bending of anchors shall be such as to properly carry out the work.

All dowels required for Limestone Work shall be made of standard heavy brass pipe of the size required.

SETTING CUT STONE: The Limestone shall be set accurately in accordance with the requirements of the Drawings. Before setting, all stone shall be washed clean on all sides and, if required, shall be scrubbed with fiber brushes using only soap powder and water and then be thoroughly rinsed with clean water. Just prior to setting, all stone shall again be sponged or drenched on all sides with clean water. Stone must not be set dry.

All stone shall be properly set by competent stone setters, true to line and level, with full flushed joints and filling all anchor holes.

All beds and vertical joints shall be 1/4" in width, except where otherwise indicated. Wood wedges may be used only where necessary to prevent the crushing of mortar under heavy blocks, and shall be thoroughly soaked before use.

Mortar shall be raked out 3/4" from the face of the stone to allow for pointing; excepting for such parts of the work as may best have the joints pointed or grouted full as set. The stone as set shall be sponged off along all joints.

Steps shall be set with a slight pitch to the front.

The ends only of lugged sills shall be bedded with mortar; balance of joint to be left open until pointed.

Heavy stone or projecting courses shall not be set until the mortar in courses underneath has hardened, all projecting stone to be securely propped until the wall above them is built.

All cornices, copings, and projecting belt courses and all stone forming gutters, etc., shall be set with the vertical joints unfilled. The exterior profile of these joints shall then be caulked with rope yarn or picked oakum and be filled solid from above with a mortar grout composed of one part non-staining cement and one part fine white sand, mixed in small quantities, and of as thick a consistency as can be poured into the joints. Grout shall be stirred vigorously until used. see CAULKING.

Splashing exposed faces of stone with mortar shall be avoided and splashings be immediately removed with a clean sponge and water.

PARGING AND BACKING UP: The entire backs of all stone, as set, shall be plastered with not less than 1/2 inch coat of neat lime putty, before backing is built. Where the stone occurs as a facing applied direct to previously erected structural members, both back of stone and face of structural work shall be plastered with setting mortar and any space left be grouted where required to insure a thoroughly filled back-joint.

PROTECTION OF FINISHED WORK: Contractor setting Cut Stone, shall cooperate with Carpentry Contractor, who will furnish and erect the necessary protection for sills and all projecting stone work. All steps and platforms shall be protected with boards during the entire period of construction.

REPLACEMENT OF DAMAGED STONE: No defective stone, and no broken, spalled, patched or otherwise damaged stone shall be set without first obtaining the Architect's approval. All damaged stone shall be recut or repaired, if approved, or be replaced by the Contractor free of cost to the Owner.

POINTING: All face joints shall be raked and brushed clean to a depth of at least 1/2 inch, carefully removing any wedges and loose mortar so that the pointing will be continuous, and after a thorough setting of the stone the joints shall be pointed flush with mortar consisting of one part non-staining cement, two parts clean white sand and sufficient cold lime putty to make as stiff a mixture as can be worked.

The top joints in coping and projecting stone members such as hoods over door-ways, are to be raked 3/4" and caulked with an approved caulking compound. See CAULKING.

CLEANING: The face of all stone work under this contract shall be properly cleaned down upon completion. If necessary, this cleaning shall be done by scrubbing with soap powder boiled in clean water, applied vigorausly with stiff fibre brushes, adding clean, sharp, fine, white sand to the soap and water mixture, drenching all exposed surfaces of stone with clear water after cleaning.

The use of wire brushes or acid of any kind will not be permitted under any circumstances for cleaning the stonework.

HARD GRAY LIMESTONE: Use Hard Gray Limestone for Steps.

CAULKING

SCOPE: Before cleaning down, top-surface joints in all Natural Stone Sills shall be caulked. All exterior windows, doors and louver frames are to be caulked all sides where they adjoin MASON'S Work.

MATERIALS: Any one of the following makes will be approved:

H. B. Fred Kuhl's Elastic Caulking Compound
Toch Bros. RIW Elastic Compound
Tremco Mfg. Co.'s Caulking Compound

Submission and approval of this material shall be in writing.

WORKMANSHIP: Joints are to be raked not less than 3/4". In setting frames in masonry openings, care should be taken to leave a sufficient space between frames and masonry for caulking in no instance less than 1/4". In spaces containing no mortar, oakum is to be packed in ahead of the caulking.

The compound is to be forced in under pressure and neatly finished. This work shall be executed by workmen experienced in this line of work.

WATERPROOFING

SCOPE: All below-greade exterior foundation walls, concrete footings and grade beams, that are adjacent to areas where the ground floor is below the finish grade, are to be waterproofed on the exterior face of wall as herein specified. This is not to include area way walls.

APPLICATION: All surfaces to be waterproofed are to be cleaned of dirt and loose particles. All cracks or voids should be wetted and filled with brick mortar.

When dry, apply L. Sonneborn Sons, Inc., "Hydrocide Mastic", heavy fibrated asphalt, in one coat to a thickness of at least 1/8". Make coat continuous and free of breaks and pinholes. Carry Hydrocide Mastic over tops and edges of footings, forming a cove at junction of walls and footings; also around all joints, grooves and slots, following all breaks in the surface.

Spread coating into all chases, corners and reveals and soffits and allow to set. Backfill may be made after 48 hours from completion of the application of mastic but not before Architect's approval. To protect coating, a layer of slaters felt,membrane cloth, heavy paper or protective covering of cement mortar may be placed over the treated area and fill added later.

The above operation should be carried out as soon as the outer walls have been carried up to grade and prior to building area walls.

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DAMPPROOFING

2 After the inside joints of all exterior walls and columns, which are to be plastered, have been painted and free from holes, apply two (2) good coats of Toch Bros. RIW No. 232, Carey's Percorproof Plaster Bond, or approved equal, according to the printed directions of the manufacturer. This material must not be cut in order to make it work easier, and surfaces must be retouched where necessary to secure an unbroken dense film on the walls. Extend this treatment 12" in on all intersecting walls and concrete ceiling slabs which are to be plastered, and into all openings or reveals in exterior walls.

THRU-WALL AND INNER WALL FLASHING

void ✓

~~Furnish and install 3 oz. Wasco Copper double fabric for all Thru-Wall Flashing and the parapet copings for counter flashings in Parapet, over lintels and exterior openings, under window sills, stone bond courses, continuous over all spandrel beams, and elsewhere as indicated on Drawings.~~

PERIMETER INSULATION

The perimeter of concrete floor slabs shall be insulated with Fiberglas Perimeter Insulation, Type PF 615, or approved equal, same shall be 1" thick and extend under slab ~~2~~ one feet. Installation shall be made in accordance with the Manufacturer's instructions for such insulation. ✓

Bull #7

DAMPPROOFING UNDER SLAB ON EARTH

Under all interior slabs on ground, place Fibreen over tamped gravel, lapping and mopping joints 6". Care shall be exercised not to puncture this paper during the pouring of the slab. Damaged Fibreen to be repaired before concrete is poured. Fibreen is manufactured by Sisalkraft Company. ✓

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STEEL JOIST CONSTRUCTION

GENERAL: Where shown on Plans, Steel Joist Construction shall consist of a reinforced concrete slab of proper mix and thickness supported by a system of adequately designed and properly erected steel joists.

JOISTS: Joists shall be of Bethlehem Open-Web Steel Joists, or approved equal. The steel used in their manufacture shall conform to the Standard Specifications of American Society for Testing Materials for Steel for Buildings, Designation A9 of latest adoption.

There shall be one typical joist not more than 5 inches in the clear from each end wall or other bearing wall parallel to run of joist. Spacing shall be as shown on structural plans, and installed in accordance with the Manufacturer's printed instructions.

BEARING: Where joists rest in masonry or concrete supports, a minimum bearing of 4 inches in length shall be provided, but a 5 inch or 6 inch bearing is preferred.

On steel supports, the length of bearing shall be not less than 2-1/2" and welded or bolted. The unit bearing pressure shall not exceed 200 lbs. per square inch for masonry work and 500 lbs. for concrete. Bearing plates shall be provided where necessary.

All supports shall be finished to a true level surface at proper elevations.

BRIDGING: As soon as joists have been erected, and before application of construction loads, Bethlehem Strut Bridging, or approved equal, shall be installed between the joists and true to line.

Unless otherwise detailed, the bridging members shall be formed of 3/4 inch cold-rolled channels not lighter than 16 gauge and furnished in proper lengths to space joists accurately. They shall be attached in a positive and rigid manner to both top and bottom chords of all joists.

Bridging shall be spaced in accordance with the following table:

SPAN	NUMBER OF LINES OF BRIDGING
Up to 14 feet	One row, near center
14 to 21 feet	Two rows, at third points
21 to 32 feet	Three rows, at quarter points

ANCHORS: The 3/8" round wall anchors shall be installed on both ends of every other joist, forming a continuous tie across the building at alternate rows of joists. Where joists rest on structural steel supports, all joist ends shall be welded to the support. Anchors shall fit snug against the metal of the joist.

FLOOR LATH shall be Standard Corruform as manufactured by Granco Steel Products Company of Granite City, Illinois.

STRUCTURAL STEEL

SCOPE OF WORK: This Contractor shall furnish and erect all beams, columns, anchors, plates, bolts, loose lintels, purlins and other structural steel as shown on Plans. For welded work, steel electrodes must be furnished.

MATERIALS: All steel shall conform to the requirements of the ASTM Specifications for Structural Grade Steel, Latest Edition.

All Arc-Welding Electrodes shall conform to the American Welding Society Specifications for Steel Arc-Welding Electrodes, Latest Edition.

SHOP DRAWINGS: Contractor shall submit four copies of Shop Drawings for approval for all structural steel, giving all information for fabrication, erection, and painting. No fabrication before approval of Shop Drawings.

WORKMANSHIP: The workmanship shall be in accordance with the AISC Specifications for Fabrication and Erection.

All columns milled for full bearing over cross section.

All abutting surfaces closely fitted.

All shop connections shall be welded unless otherwise shown.

WELDING: All welding shall be done by Operators who have been previously qualified by tests as prescribed in the "Standard Qualification Procedure" of the American Welding Society, to perform the particular type of work required. This provision need not apply to tack welds not later incorporated into finished welds.

All welding shall be in accordance with American Welding Society recommendations.

ERECTION: The erection of all structural steel including the setting of anchor bolts shall be under this contract except that the concreting-in of anchor bolts and setting of loose lintels shall be by the Mason or Concrete Contractor.

Steel shall be level or plumb within a tolerance of 1:500. Field errors shall not be corrected by burning unless permitted by the Architect.

PIPE COLUMNS: Install pipe columns where shown on drawings. Pipe to be standard weight black iron pipe of size indicated.

PAINTING: This steel work before leaving shop must be thoroughly cleaned of all loose mill scale and rust and given one coat of Zinc Cromate Paint.

After erection all exposed structural steel shall be painted as required under the Painting Section of these Specifications.

Any parts inaccessible for field painting after erection must be painted before erection using same material as used for Shop Coat.

BEARING: Bearing on Masonry shall be a minimum of 6" for beams and lintels unless otherwise noted.

Bearing plates shall be provided to maintain bearing pressures not to exceed 200 lbs. per sq. in. for brick and concrete filled blocks. No beams or lintels shall be erected on blocks not filled with concrete in accordance with these Specifications or the Structural Plans.

INSPECTION: The Architect or his representative shall have free access at all times to inspect material and workmanship. Material and workmanship not conforming to the provisions of these Specifications will be rejected, and shall be replaced by the Contractor without additional cost to the Owner, and to the satisfaction of the Architect.

SECTION F - 1

METAL WINDOWS

METAL WINDOWS shall be Maxim-Air Steel Windows, as manufactured by the Truscon Steel Division, Republic Steel Corporation, Youngstown, Ohio, or approved equal.

MATERIAL: The principal members shall be special one piece sections hot rolled from new billet steel and not less than 1½" in depth, nor less than 1/8" in thickness, and with integrally rolled glazing ledges and weathering contacts. Formed steel members shall be as follows: Operator Box and Head Section, 12 gauge; operator cover plate and sub-frame, 14 gauge, jamb and integral mullion cover plates, 18 gauge, integral mullion, 11 gauge.

CONSTRUCTION: Corners of frame and ventilators shall be mitered and electrically butt welded, or mortised and tenoned and air hammer riveted. Top and bottom rails of vents shall run continuous from jamb to jamb of window unit. Formed steel cover plates of 18 gauge material shall completely cover all operating mechanism at jambs and integral mullions.

OPERATION: Mechanical Operators shall be provided to operate all ventilators simultaneously in either single windows or in multiple unit windows built integral. The maximum limit of vent opening movement shall be not less than 60 degrees. Each ventilator shall be hinge-connected to the vertical frame members and shall have provision for adjustment.

All ventilators shall swing out at bottom and each shall be hung on hard steel pins and bronze brackets securely attached to the main frame. In multiple units built integral, vents shall be similarly supported at intermediate points on each integral mullion.

Operator mechanism shall consist of a fully enclosed cut-steel and bronze worm gear power unit which actuates a 15/16" cold rolled horizontal shaft located in the sill box. Shafts shall have pinion gears engaging with cut teeth in 5/8" x 5/16" solid steel racks attached to the ventilator connecting bars.

A sill box made of 12 gauge material shall completely conceal all operator mechanism. Removable cover plates shall be provided to permit access to all working parts.

SHOP PAINTING: All window units shall be bonderized and given a coat of gray Bakelite (phenol-resin) paint, oven-baked for one hour at 300 degrees.

SCREENS: Screens shall be of fixed type, attached to the interior side and held securely in place by clips. Screens shall have rewirable tubular steel frames, 7/16" x 1-1/8", of .028" thick formed steel and antique bronze 18 x 14 mesh (.0110" diameter) screen cloth. Frames shall be bonderized and given one coat of baked enamel.

GLAZING: All windows shall be glazed from the outside by the Glazing Contractor. Glass shall be bedded in steel window putty, held in place by copperclad wire glazing clips, and face puttied to a neat trim line.

ALUMINUM DOUBLE-HUNG WINDOWS

Aluminum Windows shall be Cupples No. 490, Commercial Double Hung Windows, as manufactured by Cupples Products Corporation, St. Louis, Mo., or approved equal.

These windows shall meet the requirements of the Aluminum Window Manufacturer's Association DH-A2.

ARCHITECTURAL AND COMMERCIAL PROJECTED WINDOWS

All (Commercial) Intermediate and Projected Windows are to be Detroit Steel Company of Detroit, Michigan, or Truscon, Commercial or Intermediate projected windows, or approved equal, as scheduled. Projected sash to be provided, with Cam Handle 150 and 467 for ventilated sash. See Specifications for double hung window for shop painting, erection, glazing, and caulking, the same to apply to this section.

METAL DOORS AND FRAMES

SCOPE: Furnish and erect one-piece metal bucks, frame and trim for all doors and interior windows except as otherwise specified, detailed or scheduled. Frames for doors scheduled to carry Underwriter's Label shall also meet the requirements of and carry the Underwriter's Label, as called for on the Door Schedule for both doors and frames.

MATERIAL: Steel is to be of the highest grade commercial furniture stock of Number 16 U. S. standard gauge.

WORKMANSHIP: All work to be executed by skilled mechanics and is to be of the finest quality; neat in appearance and free from defects.

FRAMES: Frames are to be mitered, reinforced, drilled and tapped for hardware. All miters and joints are to be continuously welded and ground smooth. Frames are to be equipped with at least three corrugated anchors on each jamb. Doors with transoms to have four anchors each jamb. All frames to be anchored to concrete floor with proper clip angles welded to bottom of frame. Cover boxes are to be provided for all hardware cutouts. Anchors are to be so attached as to hold frame rigidly in position.

FINISHING: After assembling, all oil, dirt and rust are to be removed. Where required, exposed surfaces are to be filled and frames then are to receive one dip or spray coat of metallic primer. Final finish is to be applied at the building by Painting Contractor.

ERECTION: Frames are to be set by skilled mechanics before walls are erected. Each frame shall be checked to make sure that it is plumb and true and each shall be rigidly braced in position until partitions are built. All voids behind frame are to be filled with mortar as the walls go up.

KALAMEIN DOORS AND FRAMES

All doors scheduled as Kalamein and frames for same are to be as manufactured by the American Sheet Metal Works, or approved equal, and both door and frame shall carry the Underwriters' Label, as scheduled on the Plans.

These doors are to have $1\frac{3}{4}$" dried solid wood cores with all joints doweled and with stiles and rails covered with No. 24 gauge galvanized sheets. The metal is to be drawn around and clinched into the wood core using steel clips to insure perfectly smooth metal surfaces, free from waves.

All doors are to have two panels as indicated. Panels are to be covered with 22 gauge galvanized sheets and are to have steel molds broken around each panel and neatly mitered.

Hardware for Kalamein doors will be furnished under FINISH HARDWARE. Locks will be single point type, equipped with latch bolts having not less than 3/4" throw.

Frames for Kalamein doors shall be 14 gauge pressed steel. Corners are to be neatly mitered. Frames to be provided with adequate anchoring to masonry walls.

Doors and frames are to carry a factory prime coat of Red Oxide.

STEEL STAIRS

SCOPE: This Contractor is to furnish and erect in place (under the General Contract) the metal stairs as shown on Plans, including all stringers, channel headers, supporting steel for platforms, hangers or angle struts detailed. He is to furnish the safety nosings, which are to be set by the General Contractor. All striners, supports, and treads to be designed to sustain a live load of not less than one hundred twenty-five (125) pounds per square foot in addition to the dead load, and all supporting members are to be built and anchored into the masonry walls. Concrete fill for treads and platforms are to be done by the General Contractor.

WORK NOT INCLUDED: Work to be furnished under this contract by others than the Stair Contractor: (a) filling of treads and platforms; (b) setting of safety nosings; (c) wood hand rails; (d) field painting; (e) asphalt tile and (f) lath and plaster.

STRINGERS: In general, stringers shall be of 10 inch 8.4 lb. channel with 1-1/2" flanges or 3/16" bent plates, with 1-1/4" x 1-1/4" x 3/16" angle brackets riveted or welded to stringers. Wall stringers are to continue around platforms. Stringers are to be bolted to walls. Exposed surfaces of welded joists are to be finished smooth. Face stringers shall be provided with mouldings so detailed.

FASCIAS: The fascias shall be similar to face stringers as detailed.

RISERS AND TREADS: Risers and treads shall be No. 12 gauge and formed to receive the fill. Plates for platforms to be No. 12 gauge properly reinforced. Treads and platforms to be filled by the General Contractor with concrete (as specified for 2" slabs over joist", trowelled smooth, in which the safety nosings are to be embedded. These fills are to have 6 x 6 x 10 lb. mesh reinforcement.

SAFETY NOSINGS: Provide for each riser a Wooster or equal cast abrasive metal noxing Style No. 101, 4" wide, the full width of the stairs between stringers. Nosings to be set by General Contractor.

Provide the same type nosing for all interior concrete stairs, same to extend to within 4" of wall and/or center rail. All nosings to be set by General Contractor. Safety nosings also to be installed on edges of balcony aisle treads, full width of the aisles.

NEWELS: Newels shall be cast iron. finished smooth, of stock design Type No. B, as detailed. Angle saddles are to be bolted with not less than two 1/2" bolts. Rough surfaces shall be dressed smooth on the job.

RAILINGS shall be made of 1" x 1/2" channels, top and bottom, punch for 1/2" square bars with welded joints, as detailed. Railing to be adequately secured in place and made rigid; and all jointing shall be made with full bearing parts and tight fitting. Top hand rail, furnished by the Carpentry Contractor, to be 2" round birch screwed to channels. Wall handrails, also furnish by the Carpentry Contractor, to be 2" round birch secured to wall by brackets furnished by the Hardware Contractor. Wall rails to be set the same height as stair rail.

STAIR SOFFIT: Soffit of stair and platforms are to be plastered; provide welded clips and holes for attachment of steel lath.

Metal lath to be applied to channels, 16" o. c., attached by the plasterer to the clip angles provided by Stair Manufacturer.

PAINTING: All metal shall be given one Shop Coat of approved rust resisting paint, and two coats in field.

REINFORCING: Reinforce all landings with 6 x 6 No. 6 welded wire mesh; all treads with 2 No. 3 Bars.

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METAL TOILET AND SHOWER PARTITIONS

SCOPE: This work includes the furnishing and installing of metal toilet stall partitions as indicated on Plans.

PARTITIONS: Partitions, posts headrail, shall be built of not less than 16 gauge. All partition panels to be 58" high and to have sanitary V-shaped moulding at top and bottom formed of the same sheet, which shall be interlocked and welded into the post. Furnish necessary wall and top post fittings and brass foot castings, which shall be adjustable to take up any variation in the walls and floors. Provide necessary rectangular headrail, not less than 16 gauge to brace partitions.

DOORS: Doors, where shown, are to be flush panel one (1) inch thick made of two sheets of 20 gauge steel. Doors shall be insulated with a laminated corrugated fiber board filler cemented under pressure to inner metal surfaces. The edges shall be interlocked under tension with drawn mouldings of 20 gauge steel welded at corners.

HARDWARE: The Hardware is to be Panel Weisteel Standard, or approved equal, consisting of a Weis Universal Gravity Hinge, Heavy Slide Bar Latch, Pull and Coat Hook. All parts to be brass, nickle plated.

BONDERIZED STEEL: All steel parts shall be Bonderized Galvanized tight coated, extra smooth finish.

FINISH: All work is to be finished at the Factory with an approved baked enamel finish, color selected and approved by the Architect.

ASSEMBLY: All parts shall be accurately and substantially assembled with all joints and seams completely filled. Work shall be laid out and assembled to conform to the layout as shown on the Plans.

INSTALLATION: All work shall be set in place in accordance with the Manufacturer's instructions and approved Shop Drawings. All material included in this Specification shall be left in an acceptable condition. Shower receptors to be Ceramic Tile as detailed and with Floor Drains specified under PLUMBING.

MISCELLANEOUS METAL WORK

GENERAL: Furnish and install all miscellaneous metal work required by the Drawings and/or herein specified.

STEEL AND WROUGHT IRON shall conform to applicable A. S. T. M. Specifications.

CAST IRON shall be of first quality pig iron free from blow holes and from which foundry markings, sand, etc., have been removed. All cast iron work shall be true to pattern, smooth and straight and free from defects impairing strength, durability or appearance.

Cleanout door and frame at bottom of chimney flue to be cast iron.

BOLTS, ANCHORS, ETC.: Install all bolts, straps, plates, ties, etc., throughout the building as necessary to properly carry out the construction of the building and as indicated on Drawings.

Furnish and install 24 gauge galvanized sheet dovetail slot and 12 gauge hot dipped galvanized anchors where called for on Drawings.

METAL GRILLES: In all interior toilet rooms not having window ventilation, install 8 x 8" stamped steel or other approved grilles for ventilation to pipe spaces. Grilles to have wood buck frames flush with plaster. Other grilles to be of size and kind indicated on the Drawings.

STAIR NOSING: See STEEL STAIRS Section of these Specifications.

LOUVERS, UNDERWRITERS LABELED: Louvers where shown in the wall back of the Stage shall be Underwriters Label Class A.

Louvers shall have fusible link to keep louvers closed. They shall also be equipped for manual opening.

Louvers shall be backed with 16 mesh bronze wire and shall be as manufactured by the Airolite Company of Marietta, Ohio, or approved equal.

HANGING RODS for closets where shown on Plans to be 3/4" Galvanized Steel Pipe.

METAL THRESHOLDS: Except as otherwise noted, all exterior doors are to have Wooster Ferrogrit Thresholds No. 112, made and installed as detailed. Thresholds are to be anchored in place by means of expansion bolts.

PIPE RAILING: Furnish and install where indicated 1½" o. s. dia. pipe rails, with standards of same size, securely anchored in place. Standards shall extend into concrete or masonry and shall be set into built-in sleeves at least 4" deep and caulked with lead. Pipe rail to be attached to masonry wall with expansion bolts thru flange fittings. Standards shall be spaced not more than 5'-0" apart. Pipe rails to be standard weight wrought iron with welded connections, ground smooth.

LOUVERS, UNDERWRITERS LABELED: Louvers in Transformer Vault and where noted or scheduled on drawings to be Underwriters Label, "A" Class with fusible link openers, shall be as manufactured by the Airolite Company or approved equal.

STEEL LADDERS: Furnish and install Steel Ladders as called for on the Plans. Same shall be 18" wide and fabricated with 3/8" x 2" mild steel side rails and 1/2" round steel rungs with square ends headed into rails and ends upset. Space rungs not over 14" on centers. Anchor ladder at bottom and top and at intermediate points not over 6' apart with brackets screwed with expansion bolts. Brackets shall be of same size as side rails and of such length to hold ladder 6" away from wall. Contractor to submit Shop Drawings for Architects approval before fabrication of ladders.

FOUNDATION VENTILATORS: Furnish and install where called for by the Drawings 16" x 8" cast iron Victor foundation ventilators, or approved equal, with closeable shutter and screened with 16 mesh bronze cloth.

CORRUFORM: Corrugated Steel Base for Concrete floor slabs shall be Standard Weight Corruform as manufactured by Granco Steel Products Company of Granite City, Ill.

STEEL STUDS: Steel Studs and Runner Track shall be as manufactured by United States Gypsum.

WHEEL GUARDS are to be 30" Donley Wheel Guards.

FIRE EXTINGUISHERS

Furnish and install where called for on the Plans, the Portable Fire Extinguisher Equipment as herein specified. This equipment to use Carbon Dioxide and Water as the extinguishing medium and shall be as manufactured by the Walter Kidde & Company, Belleville 9, N. J., or approved equal.

Fire Extinguisher "A": Carbon Dioxide Model 10T-1 on wall bracket.

Fire Extinguisher "B": 2½ gallon Stainless Steel Water Extinguisher in Metal Glass Door Cabinet for recessing in wall.

Fire extinguishers are to be left full and ready to operate.

Where metal glass front cabinets are called for, they shall be for flush mounting and of proper size to hold the model extinguisher called for and shall be as manufactured by the W. D. Allen Manufacturing Company, 568 E. Lake Street, Chicago 6, Illinois, or approved equal. Where brackets are called for, they shall be standard brackets as manufactured by the Walter Kidde & Company.

CARPENTRY AND MILLWORK

GENERAL: Furnish and erect all necessary carpentry work, such as corming for concrete, rough bucks, framing, grounds, scaffolding, temporary stairs, barriers, etc., for all work shown on Drawings or mentioned in these Specifications. Carpenters shall do all patching and cutting of their work as necessary for the other trades. Carpenters shall at all times protect the other work, provided any carpentry work is necessary to protect same, and take care to advance all sub-trades as rapidly as possible. Scaffolding for plastering and painting is specified under these respective sections of this specification. Certain Bavinco Cabinet Work and Science Equipment, is to be furnished and installed under separate contract as noted on Drawings.

PROTECTION OF WORK: The Carpenter shall provide such covering as may be necessary to protect all masonry, door and window sills and jambs, or other woodwork, from damage of any character. He shall cover, protect and keep clean all laid floors until the completion of the building.

CUTTING AND FITTING: The Carpenter shall do such work in this line as is usually required for the other mechanics about the building, such as cutting away and rebuilding, fitting to other work, etc.

EXTERIOR WOODWORK: Boiler room door frame to be as detailed on the drawings, and of "C Finish" Yellow Pine, thoroughly Air Dried; all joints must be carefully fitted, thoroughly sanded, and given a priming coat (as specified under Painting) on all sides at the mill before being delivered at the job. Door frame is to be made from edge-grain stock, and is to be toxic treated.

INTERIOR WOODWORK: All interior woodwork and trim, except hand rails, shall be "C Finish" Yellow Pine, thoroughly seasoned and kiln dried, and thoroughly sanded at the mill to remove all machine markings. Any raised grain, roughness or injury to rim surfaces must be hand dressed before erection or painting. All mouldings, members, etc., will be of selected stock detail unless otherwise detailed on drawings.

No spliced mouldings will be permitted in stretches of less than 15 feet. No butting at splices will be permitted. Use only small finishing nails and set without hammer marks. Joints to be carefully and well made and must fit close. All interior woodwork is to be executed by first class carpenters.

See Finish Schedule on the Drawings, the Detail Drawings, Etc., for trim, chair rail, picture mould, base, etc.

All rough bucks, frames, and trim in basement to be toxic treated.

WOOD HAND RAILS: Where wood hand rails are shown, furnish and install 2" round unselected birch handrails, accurately turned, and supported on metal brackets furnished under FINISH HARDWARE. Spacing of brackets not to exceed 5 ft. centers.

DOORS AND FRAMES: Except as otherwise noted, all Interior Doors scheduled to be wood shall be 5-ply flush veneered 1-3/4" doors as made by Roddis Lumber and Veneer Company. Doors shall be of fully water-proofed construction assembled by dry-glue process in strict accordance with "Roddiscraft Standards". Doors of the Hardwood Products Company, Nenah, Wis., considered equal. All doors shall be of sizes scheduled, and, except as otherwise noted, shall be 1-3/4" thick. Cabinet doors to be 1-1/8" thick, as noted or scheduled on drawings.

The veneers for all flush doors are to be of Unselected Birch.

Glazing shall be in accordance with the schedule and specifications. Sticking for same shall be G. E. 4 (Roddis).

All door frames, except as otherwise noted, will be metal. See METAL DOOR BUCKS, FRAMES AND TRIM.

All wood doors scheduled or noted as Class "B" Label shall be Weldwood Fire Doors as made by the United States Plywood Corp., approved by the Underwriters' Laboratories, Inc., and labeled accordingly.

Face veneers of Labeled Wood Doors shall be 1/24" thick rotary cut Unselect Birch. Cores to be of incombustible mineral composition having a nominal density of 20 lb. per cu. ft.

All Exterior Doors shall be 5-ply flush veneer solid core $2\frac{1}{4}$" thick doors as manufactured by Roddis Plywood Corporation or approved equal. Exterior Doors shall be thoroughly seasoned kiln dried and well sanded at the Mill to remove machine markings.

Face Veneer Doors to be of unselected Birch or Gum of exterior grade.

WOOD WINDOW SASH AND TRANSOMS: Interior window sash and wood transoms to be thickness scheduled on Drawings. Interior sash and all transoms to be "C Finish" Yellow Pine. Glazing to be in accordance with Specifications and as scheduled on Drawings.

CABINETS, COUNTERS, SHELVING, ETC.: All cabinets and counters are to be as detailed using "B and Better" Yellow Pine for the frames, shelves, drawers, etc., and laminated wood or plywood for doors, exposed ends and as a base for linoleum tops.

Where linoleum tops occur, the linoleum is to be inlaid and 1/8" thick and shall be unrolled and permitted to lay flat a sufficient length of time to remove the tendency to curl and, then, be securely applied to the wood base by means of linoleum cement or mastic, taking care to roll out all air pockets and secure complete adhesion.

All linoleum counter tops are to have stainless steel metal edging molds which cover the edges of the top and extend under the linoleum. This molding and the fitting of the linoleum shall be done in a workmanlike manner. Both linoleum and metal edging are to conform to samples submitted to the Architect for approval.

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Counters and cabinets are to be completely assembled, nailed, blocked and glued, at the factory and are not to be delivered knocked-down.

Shelving to be as indicated, using 13/16" material, dense yellow pine. Where indicated shelving shall be equipped with K-V adjustable standards and K-V No. 237 supports. Use two rows of standards at front and rear of each end of the shelf, notching the latter to secure close fit between end of shelves and the supporting wood member. Standards are to be screwed to the wood members at all holes, which are 6" o. c. The proper screws are to be furnished by the Manufacturers of this material, Knape and Vogt Manufacturing Company, Grand Rapids, Michigan.

Counter Tops, Ticket Booth and Concession Stand shall be covered with Flor-ever Plastic Covering as manufactured by Delaware Floor Products, Inc., Wilmington, Delaware, or approved equal.

TROPHY CASE shall be as detailed and equipped with Knape & Vogt Manufacturing Company's No. 992 Ball Bearing Sliding Glass Door Track Assembly, or equal.

GROUNDS: Set 3/4" grounds on lath and 5/8" on brick or tile walls. Attach grounds to Anchorite or Bull Dog wall plugs, 16" o. c. Wood plugs will not be permitted. Where grounds are attached to metal lath with wire, grounds shall be saw-cut 16" o. c. for securing same to lath. Grounds shall be true to line, spaced accurately, plumb, straight, even and true to dimension. Grounds shall be so spaced that finished trim will cover plaster approximately 1/2".

WOOD FLOORS: All finish wood flooring for stage to be plain sawed clear Tupelo with 2-1/4" face, tongued, grooved and end matched. It must be accurately milled. Sample flooring shall be submitted to the Architect for approval.

After seeing that all flooring sheathing is thoroughly nailed down level, and dry, lay the sheathing paper, lapped 2", and the finish flooring specified above.

Lay flooring in a workmanlike manner, jsing 8D Reading, or approved equal, cut flooring nails, and blind nailed to every sleeper. This flooring must be driven up tight without hammer marks. The flooring shall be nailed so as to provide a rigid non-squeaking floor and nailing as stated herein is the minimum requirement. On completion all high and rough places to be scraped smooth and sanded, and the flooring kept clean until the finish is completed. It is recommended that this be the last work done in the building; if not, it must be properly covered for protection.

Stage flooring shall be laid on 1-5/8" x 1-5/8" wood sleepers, 16" o. c., and secured to concrete with Bulldog Clips set in concrete. Sleepers to be wedged to true plane and grouted in place with neat cement and carefully leveled.

Sleepers to be laid over single thickness of Sisalcraft Paper, with 4" wide laps. Joints in sleepers to be made only at a clip and then with not more than two joints in width of area. Joints in sleepers shall be at least 4' distant from nearest similar joint in parallel members.

Fill area between sleepers and up to top of sleepers with Vermiculite.

HARDWARE: This Contractor shall furnish all rough hardware as required and/or specified. Finish hardware will be furnished under the FINISH HARDWARE Section of these Specifications. All hardware shall be installed by this Contractor in accordance with the Manufacturer's directions so that it operates easily, quietly and properly.

GLASS AND GLAZING

Glass for all doors, partitions, windows and transoms is to be of the type mentioned in the Door and Window Schedules. Plain flat glass is to be DSB, Pennvernon, Libby-Owens, or American. All obscure glass is to be 1/8" Industrex. Plate glass to be 1/4" polished plate. Heat absorbing glass to be L. O. F. 1/8" Aklo Glass. Crystal Sheet to be 7/32" thick.

INTERIOR GLAZING: All glass is to be neatly back-puttied and the exposed putty neatly finished and protected from damage until acceptance of the building.

EXTERIOR GLAZING: All glass in exterior steel windows shall be glazed as follows: All glass shall be bedded and face glazed with Tremglaze Mastic Glazing Compound, as manufactured by The Tremco Manufacturing Company, Cleveland, Ohio, or approved equal. The compound shall be a color selected by the Architect and shall be able to withstand exposure on the sash without being painted.

All painting of the sash (when required) shall be done before glazing, and no painting of the sash shall be done after glazing. The compound shall be especially adapted for glazing metal sash.

All glass shall carry labels, which are to remain until cleaning.

All broken glass shall be replaced and all glass cleaned just prior to completion of the job.

WOOD OVERHEAD DOOR

OVERHEAD DOOR: Furnish and install where shown on the Drawings, One Wood Overhead Door of size and design shown and as manufactured by Barber-Colman Company, Rockford, Illinois, or approved equal.

GENERAL: Door shall be Barcol Over Door Model 31 and shall be accurately counterbalanced by means of extension springs, connected to the lower corners by flexible steel airplane cable of ample strength running inside the continuous vertical track brackets. Door shall latch automatically when closed, locking shall be by means of standard size lock Cylinder and Night Latch. Furnish three keys.

Glass for door to be D. S. B. Furnish and install U shape rubber astragal on bottom of door.

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HOMEMAKING DEPARTMENT

All equipment in the present Homemaking Department is to be moved and re-installed as shown on Drawing No. A-19.

Contractor shall furnish and install all new Homemaking Department Equipment as manufactured by Bavinco and shall refinish all existing cabinets to match the new work.

SCOPE: Where base and wall cabinets in the Homemaking Department are called for to be Bavinco same shall be as manufactured by the Bavinco Manufacturing Corporation and distributed by the McGregor Company, Athens, Georgia.

GENERAL: Cabinets shall be complete with counter tops, splash, sinks, fittings, hardware, etc. Linoleum for tops and stainless steel edging for same shall be as approved by the Architect. Finish and colors shall be as approved by the Architect.

INSTALLATION: The installation shall conform to Shop Drawings by the Bavinco Manufacturing Corp., as approved by the Architect. Installation shall be complete with all indicated or required furring and all units shall be thoroughly anchored to the construction by approved methods.

ITEMS NOT IN CONTRACT: Items marked N. I. C. are not in the General Contract, but all necessary utilities such as water, drains, and electric, shall be roughed-in.

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CHALKBOARDS AND TACKBOARDS

SCOPE: Furnish and install chalkboard, tackboard and trim for same as called for on the Drawings.

MATERIALS: Chalk Board shall be one of the following, or approved equal:

E. W. A. Rowles	Permasite
Weber Costello Company	Vitoprest
Claridge School Equipment Company	Durocite

TACKBOARDS: Where tackboards are indicated on Plans by the letters "T. B.", erect 1/4" Perma Korkboard, mounted on 1/4" tempered masonite backing or approved equal, as manufactured by the E. W. A. Rowles Company, cemented to plaster using cement furnished by the Manufacturers and in accordance with their recommendations.

MAP RACK AND DISPLAY RAIL are to be of aluminum with Tan Cork insert. These shall be as shown on Drawings and as manufactured by E. W. A. Rowles Company, or approved equal. [illegible]

INSTALLATION: Toe nail the chalkboard in the space where it is to hang. Be sure the board is actually toe nailed and that nails are not countersunk, because the nails will later be removed. Allow the board to hang for at least 24 hours before the molding is installed.

Lay the board flat, writing surface down, upon a clean, level surface, protected by paper. Apply No. 50 cement 1/2" thick on a continuous line, 2" wide running the entire length of the board.

Put the chalkboard back on the wall and see that it is held firmly in place by a 4" x 1" braced on the floor.

Place a clean strip of paper between the 4" x 1" and the chalkboard surface. The 4" x 1" is placed along the center of the board to squeeze the cement on the back, against the wall. Let the brace stay in place for 24 hours while the cement is drying.

After the cement has set for 24 hours, remove the 4" x 1" and install quarter round.

Use Rustproof Metal Joints when two or more pieces of chalkboard are needed to fill a given space. No nails are needed since the ends of the chalkboard are slipped underneath the Rustproof Metal Joints. Be sure expansion space is left between the ends of the chalkboard and the joints themselves.

Extra care should be exercised (1) to be sure that no nails are driven through the top, ends,,and bottom of the chalkboard; (2) to be sure that no nails are driven so close to the edges of the chalkboard that they restrict its natural expansion; (3) to be sure that the quarter round itself is not nailed so tightly against the board that the board's movement will be restricted.

Tackboards and Chalkboards are to be cemented to $\frac{1}{4}$" Exterior Sheathing Grade CC Plywood, as manufactured by U. S. Plywood Corp., which is to be attached to wall using 5/32 countersunk toggle bolts.

CHALK TROUGHS: At bottom of chalkboards, erect wood chalk trough and supports, carefully levelled, extending under chalkboard to face of rough wall and securely nail to ground strips and to moulded aprons. Use EWA Rowles Metal Chalk Trough Covers, or approved equal, as indicated on Drawings.

CORRELATIVE PROVISIONS:

Grounds - The Carpenter shall furnish and securely fasten kiln-dried wood "ground" strips 5/8" thick in accordance with detailed Drawings at top, bottom and ends of all spaces to be occupied by Chalkboards. Grounds shall be set to accurate levels and true to planes.

Trim - Wood trim shall be securely fastened to "ground" strip by the Carpenter. Trim to include chalk trough and apron as detailed. After Chalkboards are installed a quarter round shall be securely fastened to surrounding trims and chalk trough, firmly holding slats in place.

Plaster - Plaster shall be applied by the Plasterer to all spaces back of Chalkboards with a scratch or brown coat, floated to a true plane and in perfect alignment within 1/4 inch of the face of ground strips. Plaster behing "T. B." to be smooth trowel finish flush with grounds. Unfurred outside walls shall be given two coats of dampproof paint before plastering.

Painting - All Chalkboard trim (except inner loose moulding) shall be completely finished before Chalkboards are installed. Inner loose moulding shall be finished (all except last coat), which shall be applied after moulding is attached.

Painter will be responsible for any damage to Chalkboards by paint or other painter's finish.

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FINISH HARDWARE

GENERAL: All finishing builders' hardware shall be covered under this section with the exception of the following items which shall be covered in other sections of the Specifications and will not be included in the finishing hardware contract.

(a) Rough Hardware
(b) Metal Windows and Metal Transoms and Hardware
(c) Metal Kitchen Cabinets and Hardware
(d) Access Panels and Hardware
(e) Metal Toilet Partitions and Hardware
(f) Metal Signs and Numbers
(g) Hand Rail Brackets
(h) Metal Lockers
(i) Medicine Cabinets
(j) Screen Window Hardware

The finishing hardware contract shall be part of the General Contract. There will be no allowances set aside and apart from the General Contract for this section.

All finishing builders' hardware, with the exception of that listed previously, shall be included in the finishing builders' hardware contract. Butts, locks, door closers, and miscellaneous hardware for metal doors and frames shall be supplied by the finishing builders' hardware contractor and shall not be part of the metal door and frame contract. Hardware finished under this section for metal doors and frames shall be made to standard template. Template information shall be furnished to all trades requiring such information.

The Contractor shall be responsible for furnishing all finishing builders' hardware necessary to complete the job in a satisfactory manner and upon completion of the job shall leave all hardware operating properly. In the event of omissions or items not specifically provided for in this Specification, it shall be the Contractor's responsibility to furnish and install these items. They shall be of equal weight, quality, and finish as the other adjacent hardware furnished on the job.

It shall be the Contractor's responsibility for checking all details such as wall clearances, bevels, hands of locks and door closers, etc., in order that all items of hardware shall fit and operate properly.

All hardware shall be guaranteed for a period of one year from date of building completion to be free of defects in workmanship and operation. Any hardware proving defective from normal wear intended for it during this year shall be replaced or repaired by and at the expense of the Contractor.

All items of finishing hardware shall be delivered to the building site or as otherwise directed in advance of its requirement to allow inspection time before application. All items of hardware shall be properly wrapped in separate containers - complete with screws. Each item shall be labeled for its location of application.

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As soon as practical and prior to the fabrication of any finishing builders' hardware for this job, the Contractor shall submit to the Architect for approval three (3) copies of a tabular list covering all items of builders' hardware required under these specifications or to fully complete the work. The Architect may require samples of hardware and catalog cuts, and descriptions. These samples are subject to remain in possession of the Architect until the job is ready for hardware application and then may be used on the job.

Locksets and general door trim, other than butts, are to be properly set and then removed until painting is entirely finished and then reset free from paint, stain, etc.

The above items with all necessary finish hardware for the proper operation and to complete the work specified and indicated on the drawings except items under other division of the specification: Windows, Miscellaneous and ornamental metal, Factory assembled wood or metal cabinets, Hardware and fittings for mechanical equipment.

Hardware not specifically mentioned and necessary for the completion of the work shall be furnished. Such items shall be of type and quality suitable to the service. Should details or conditions make hardware specified unsuitable, provide hardware of proper type similar in operation, quality and type subject to approval of the Architect.

Manufacturers numbers listed in the following schedule are descriptive and not restrictive and denote quality and operation.

CONTRACTORS OPTION: The Contractor may furnish, for 1-3/4" thick doors, cylindrical heavy duty locks such as Corbin, Russell & Erwin 400 Series, Schlage "D" locks or Sargent 7600 Series Integral Locks provided functions comply with the Specifications. Design shall be plain 2¼" knob and rose in wrought trim with reinforced knobs.

For 1-3/8" thick doors, Standard Duty Locks such as Russell & Erwin 300 Series, Schlage A locks, Sargent 4500 Series or comparable locks by Corbin may be used. All other requirements of the Specifications to remain in force.

FINISH: All butt hinges to be primed for paint. All other hardware shall be dull bronze (U.S.10) except in the kitchen, public and private toilets which shall be polished chrome (US26).

KEYING: All cylinder locks shall be masterkeyed. In addition exterior door cylinders shall be keyed alike. Furnish 3 master keys.

BUTT HINGES: All doors shall have 1½ pairs butts. Exterior doors opening out shall have non-removable pins. All doors requiring closers shall have ball bearing butts. Sizes shall be as follows:

Exterior Doors 3'-0" to 4'-0" - 2-1/4" 4½ x 4½
Interior Doors Kalamein or Hollow Metal 3'-0 to 4'-0 1-3/4 4 x 4
Interior Doors 2'0 to 3'0 1-3/4 4 x 4
Interior Doors 2'0 to 3'0 1-3/8 4 x 4

KICKPLATES: Kickplates shall be 16 gauge bronze, bevelled three sides, with countersunk, oval head screws. Plates shall be 8" high and 1½ less than width of door.

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PUSH PLATES: Push Plates and Pull Plates shall be size $3\frac{1}{2}$ x 15, cut for cylinder where required.

FLUSH BOLTS: Pairs of doors requiring locks shall have flush extension bolts mounted top and bottom in the edge of the inactive leaf to provide inaccessibility where doors are closed.

DOOR CLOSERS: Where scheduled, door closers shall be of the following sizes:

Exterior Doors 3'-0 to 4' - $1\frac{3}{4}$ Size 4
Interior Doors 2'0 to 3'0-$1\frac{3}{4}$ Size 3
Interior Doors and Screen Doors 2'0 to 3'0 $1\frac{3}{4}$ Size 2
Closers on exterior doors shall be hung on Corner Brackets.
Closer 43V [illegible]

DOOR STOPS: Door Stops shall be required for all doors whether equipped with closers or not where conditions are such that doors will contact trim or wall or fixtures.

FIRE EXIT DEVICES: Fire Exit Devices shall be rim type as specified and shall be equal to Sargent & Company "Quick" Exit Devices with 3/4" throw double roll back guarded Latch Bolt. Each device shall have cylinder operation with heavy cast bronze sectional handle set.

FIRE ALARM DEVICES: Fire Alarm Devices shall be furnished with reinforced crossbars.

SILENCERS: All single doors in metal frame shall have three each rubber door silencers. All pairs doors two each.

SCHEDULE:

All finish shall be NS10 except Toilets and Homemaking which shall be NS26.

All cylinder locks shall be Master Keyed to existing building.

Kick Plates for exterior doors shall be 16 gauge 10" high by width of door less 2".
Interior doors 16 ga. 8" high by width of door less 2".

Each Pair of Exterior Doors No. 1, 2, 3, 7, 8, shall have:

3 pr. Butts BB 146P ~~$4\frac{1}{2}$~~ x ~~$4\frac{1}{2}$~~ 5 x 5
1 Set F E Bolts 35858
2 Closers 44VH
2 Brackets 53-44V
2 Kick Plates

Single Exterior Doors, 4, 5, 6, 9

$1\frac{1}{2}$ Pr. Butts BB 146P ~~$4\frac{1}{2}$ x $4\frac{1}{2}$~~ 5 x 5
1 F E Bolt 5858
1 Closer 44V
1 Bracket 53-44V
1 Kick Plate

Pairs of Doors 12, 12a, 12b

3 Pr. Butts BB 146P 4½ x 4½
2 Push Plates 315½ RC
2 Pulls 1536
2 Closers 43V
2 Kick Plates
Stops if required.

Pairs of doors No. 22 - Band Room Entry to Corridor
" " No. 22 - from Auditorium
" " No. 15 - from Industrial Shop
" " No. 15 - Corridor to Agricultural Shop.

3 Pr. Butts BB 146P 4½ x 4½
2 Push Plates 315½ RC
2 Pulls 1536
2 Closers 43VH
1 Dead Lock 4823
2 Kick Plates
2 Flush Bolts 1116-12"
Stops if required.

Pairs of doors No. 24 from Storage G51
" " No. 24 from Storage 133
" " No. 28 from Heater Room
" " No. 17 from Supplies G14
" " No. 28 from Mechanical Equipment Room 220

3 Pr. Butts 146P 4½ x 4½
2 Flush Bolts 1116-12"
1 Lock Set 7625AS
2 Stops 214 x RP

Single Doors No. 26 - Band Room to Entry
" " No. 26 - Entry to Band Room
" " No. 25 - Stairs to Stage
" " No. 19 - Rooms G24 and G39 to Corridor
" " No. 23 - To Coat Room
" " No. 20 - 23 to Public Toilets

1½ Pr. Butts BB 146P 4½ x 4½
1 Push Plate 315 RC
1 Pull 1536
1 Closer 43V
1 Kick Plate
Stops if required

Single Doors No. 27 - To Military Room
" " No. 28 - To Choral Room
" " No. 14 - To Agri. and Drafting Rooms
" " No. 13 - Through Hallway 108
" " No. 13 - From Homemaking
" " No. 13 - From Classrooms

1½ Pr. Butts BB 146P 4½ x 4½
1 Lock Set 7637AS
1 Holder G2-F40X

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Single Doors No. 25 - To Practice Rooms
" " No. 18 - From Closets G7 - G15
" " No. 13 - To Room 106
" " No. 23 - From Closets 215 - 216

1½ Pr. Butts 146P 4 x 4
1 Latch Set 7615AS
1 Stop 214 x RP

Single Doors No. 14, 16, 19, 23 from Closet G41, Supply Rooms, Storage Rooms, Corridor from Dark Room

1½ Pr. Butts 146 P 4 x 4
1 Lock Set 7625AS
1 Stop 214 x RP
Door from Dark Room to have 43V Closer and Bracket

Single Doors No. 21 to Small Toilets
" " 23 to Dressing Rooms

1½ Pr. Butts 146 P 4 x 4
1 Lock Set 7665AS
1 Stop 217½ x RP

Single Doors No. 27 to Room G54
" " No. 19 from Room G57
" " No. 27 to Room G57
" " No. 23 to Room 121 -125
" " No. 30 from Room 219
" " No. 31 to Room 219
" " No. 14 to Room G13

1½ Pr. Butts 146 P 414
1 Lock Set 7605½ AS
1 Stop 214 RP

Communicating Doors No. 20 to Rooms 105, 204, 209, 217

1½ Pr. Butts 146P 4½ x 4½
1 Lock Set 7675AS
1 Stop 214 x RP

Doors No. 29 from Pipe Space

1½ Pr. Butts 146 P 4 x 4
1 Dead Lock 4820
1 Pull 4451-A5

Transoms and Breeze Sash

1 Pr. Butts 290P - 3 x 3
1 Transom Catch 3853½
2 Transom Chains No. 8 - 12

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20 Sash Poles with 198 hooks
20 Pole Hangers 158
2 GJ64 Silencers each pair of doors with metal frames.
3 GJ Silencers each single door with metal frames.

Teachers Cabinets

Butts 285P 2½ x 2½
Catches 43X
Pulls 4451-A5
Cabinet Locks No. 750

All other Cabinets

Hinges 1584P or 1530P
Catches 33K
Pulls 4451 A5

Hardware Numbers were taken from the Catalogues of Stanley Works, Sargent & Company, Detroit Hardware, and Adams-Rite Manufacturing Company.

ROOFING

SCOPE: The General Contractor shall see that the Insulrock Roof Deck is properly prepared to receive the built-up roofing.

The Roofing Contractor shall furnish all materials, equipment and labor necessary for the proper installation of the roofing and sheet metal work pertaining thereto, all as shown on the Drawings and herein specified.

INSPECTION: This Contractor shall inspect roof deck prior to starting his work to see that the deck is in proper condition to receive the roofing. He shall make good any of his work that becomes defective due to installation over faulty work.

The deck must be dry and free of dust or other debris before any felts are applied.

MATERIALS: The materials used in the construction of this roof shall be as follows:

MATERIALS	LBS. PER SQUARE
Felt 4 plies, 15 lb. Feltex	75
Asphalt	175
Slag or	300
Gravel	400

FLASHING: Counter flashing shall be 16 oz. Copper.

SURFACING: 400 lbs. per square of Gravel or 300 lbs. of Slag.

APPLICATION: The Feltex used in the construction of this roof shall be 36 inches wide. The roof surface shall first be mopped with a heavy coating of asphalt into which, while hot, shall be applied four layers of felt mopped solid between the sheets so that at no point shall felt touch, each sheet to overlap the previous sheet 27-1/2" leaving 8-1/2" exposed. To the top surface of this construction, a flood coat of Asphalt shall be poured from a dipper and not less than 50 lbs. shall be used to cover 100 square foot of roof surface. Into this top flood coat of Asphalt, while hot, slag or gravel shall be embedded. Carey Asphalt used in construction of the roof shall not be heated over 400° F.

FLASHING: General Contractor to install concrete cantstrips, 4" high as detailed, where walls or other vertical surfaces occur. Extend all plies of regular roofing felt to top of cantstrip and flash with three layers of 12" strip of 15 lb. felt, extending over roof and cantstrip and up 4" on wall, and one layer of fabricated flashing membrane. Hot asphalt may be used for cementing between layers of this flashing construction but the exterior surface must be coated with a heavy trowel coating of asbestos plastic flashing cement.

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Unless otherwise shown in wall sections, this flashing is to be counter-flashed with 16 oz. copper. Joints is counter-flashing to be lapped 3". This cap flashing to be furnished under SHEET METAL WORK.

Where metal spillway flanges occur, lay the first two layers of felt under the metal, nail the metal down with nails 2" on center around edges. Over this embedded in hot asphalt a layer of saturated fabric, covering entire flange and extending onto roof not less than 4", over which lay the succeeding layers of felt.

GUARANTEE: This roofing, together with all flashing, shall be guaranteed against all defects for a period of Twenty (20) Years. This guarantee shall be backed by a Surety Bond written by an approved Bonding Company, and delivered to the Architect on completion of the installation.

SHEET METAL WORK

GENERAL: All Sheet Metal Work, unless otherwise marked on the Plans, is to be copper.

GALVANIZED IRON: All parts marked "G. I." are to be Galvanized Armco Iron or Toncan well riveted and soldered and not less than 26 gauge.

COPPER: All flashings shall be made of Copper. All outside spouting, leader heads, and spillways shall be made of hard (cornice temper) copper. Where the width required is 16" or under, Economy Strip Copper may be used, and where the width is over 16", Standard Copper Sheets shall be used. All material shall weigh 16 oz. per square foot, except as herein otherwise specified.

THROUGH WALL FLASHINGS: Furnish and install copper through wall flashings under parapet copings; for counterflashings in parapets and in all rising masonry walls where roofs abut; over lintels of all exterior openings; under window sills and stone band courses; continuous over all spandrel beams and elsewhere indicated on drawings or wherever flashings are set in a bed of mortar.

All through wall flashings shall be Revere-Keystone Interlocking Thru-Wall Flashing as manufactured by Revere Copper and Brass Incorporated or approved equal, designed to provide keyboard in the mortar bed in all directions, vertical, lateral and horizontal. Flashing lengths shall not exceed 42 inches. Unless flashings are to be bent to installation shapes by the manufacturer, samples of bent flashings shall be submitted for approval.

Through wall flashings shall be formed of 16 oz. copper where exposed. They may be of 10 oz. copper where not exposed in the finished work. Samples of through wall flashing shall be submitted for approval.

All flashings shall extend through walls to within 1/2 inch of exterior wall faces and turned up at least 2 inches on inside face of walls, unless otherwise shown on drawings. Counterflashings shall turn down 4 inches over roof base flashings. Lintel flashings and flashings under sills shall extend at least 4 inches beyond jambs of openings. Flashings over spandrel beams and under stone band courses shall be continuous and installed as shown on drawings.

All through wall flashing shall be set with full bed of mortar above and below the flashing and shall be installed in strict accordance with the Plans and Specifications and with the manufacturer's standard requirements.

FLASHING: See "FLASHING" under the ROOFING Section of these Specifications.

CONDUCTORS: Conductors are shown at required points on Plans. Unless otherwise specified, these are to be of 16 oz. copper with corrugated surfaces and rectangular forms, of sizes marked. Joints must be soldered and holdfasts of copper covered wrought iron, up to 8' on centers, securely anchored in the walls, with expansion bolts; the show brands of copper to be placed and soldered permanently over the iron holdfasts. Terminate conductors at base in cast iron boots of an average length of 2'-0" above the finished grade and specified under PLUMBING. Inside conductors, indicated on the drawings as cast iron, shall be installed by the Plumbing Contractor and made complete with roof drains as specified. Connection of roofing work to the roof drains shall be done by the Roofing Contractor.

ROOF VENTILATORS: All ventilators shall be Turbin Type, constructed of Zinc Coated Iron, painted inside and outside with exterior Aluminum paint.

Ventilators to be of size shown on Drawings, Allen Type C as manufactured by Allen Ventilating Division or approved equal.

ROOF FANS: Where shown on drawings install Jen-Air Roof Exhausters or approved equal. Fans to be of sizes shown.

SHOP EXHAUST FANS shall be American Blower or approved equal, of size and type shown on Drawings.

EXHAUST DUCTS: Install as shown exhaust ducts of 18 gauge galvanized iron. Where ducts pass thru roof flash and counterflash to make weather tight.

LATHING AND PLASTERING

SCOPE: This work includes the furnishing of all materials, labor, scaffolding and equipment necessary for the complete installation of the lathing and plastering of all areas scheduled for plaster, as hereinafter specified. This work shall be in accordance with Standard Specifications No. A 42.1-1946, of the American Standards Association, except as the same may be modified herein. Samples of all finishes called for herein shall be submitted to the Architect for approval.

GROUNDS: All grounds on metal lath are to be 3/4" thick, and 5/8" on brick, tile and concrete. See CARPENTRY Section. Where grounds are wired on, they shall be saw cut to receive the wire.

CORNER BEADS: Erect at all exposed or external plastered corners carefully applied true to plumb and brought to a straight edge and plane, Milcor No. 1, 26 gauge corner beads. This bead to be used for plastered jambs where these are called for. Beads shall be inspected before and after application, as none will be accepted if even slightly bent or showing evidence of having been straightened.

METAL LATH: All furred and suspended ceilings are to have 3.4 lb. diamond mesh lath attached to 3/4 channels 16" on center with No. 18 gauge tie wire, secured to 1½" channels hung on No. 8 gauge hanger wire, 4' on centers, where necessary. All internal angles of plastered walls and at walls and ceilings, apply 4 x 4" cornerite. Omit cornerite at ceilings of rooms having picture moulds. Where ceilings are attached directly to steel joists, apply 3/8" 3.4 lb. rib lath directly to joist. All metal lath to be properly lapped and anchored.

STEEL STUDS shall be Trussteel Studs. Floor and Ceiling runner tracks and stud attachment shoes, all as manufactured by United States Gypsum Company or approved Equal.

LATH: For Steel Stud Partitions shall be 3/8" x 16" x 48" perforated Rock Lath.

ERECTION: Erection of steel stud partition, Rocklath and Plastering shall conform to the specifications of the United States Gypsum.

PLASTER: For all areas scheduled for Plaster, Use Acme, U. S. G., or approved plaster, according to the above mentioned "Standard Specifications", for three coat work, with smooth trowel finish. Aggregates may be Sand, Perlite or Ensilite.

Plaster to be rodded and darbyed to grounds with straight edge and the finish applied and brought to a true smooth surface free from waves or other defects. Waves on surfaces or at corners will be condemned.

Where Keene's Cement Finish is scheduled it shall be mixed in the proportions of one (1) part lime putty to three (3) parts of Keene's Cement, by volume. This finish shall be applied over a thoroughly set base coat which is nearly but not quite dry, scratched in thoroughly, laid on well, and filled out to a true, even surface. The thickness shall be from 1/16 to 1/8". The finish shall be allowed to dry a few minutes and then it shall be well troweled with water to a smooth finish, free from cat faces and other blemishes. If the base coat has dried out, it shall be sprayed with water but not soaked, before the finishing coat is applied.

Where Chalkboards and Tackboards and Acoustical Treatment occur, the plaster is to be rodded to grounds to a true plane, and the finish coat omitted. See CHALKBOARDS and ACOUSTICAL TREATMENT Section of these Specifications.

PLASTER MOULDINGS: Where called for on the drawings,mouldings are to be run in quick setting moulding plaster. Plaster mouldings are to be metal lath reinforced on substantial backing, as detailed, and shall be in true alignment and without pockets or other damaging defects. Contractor to submit full size shop drawings of plaster mouldings for Architect's approval before any of this work is done.

AGGREGATE AND MIX: Use Rollo, or approved equal, well graded, clean and sharp sand for the first two coats; and not more than two parts sand to one part plaster. This sand must carry tests as specified for concrete sand. Fine ungraded sand will not be permitted.

INSPECTION BEFORE PLASTERING: Just before beginning plastering this Contractor shall inspect and test for rigidity, true to plumb and plane, etc., all lath, grounds, furring, bucks, cornerbeads and other members that are to be concealed by or built into the plastering. This Contractor shall duly notify and receive permission from the General Contractor before closing in any work of other sub-contractors.

PROTECTION: All plastered areas are to be protected as necessary to prevent injury by the workmen. Should cracks appear after the finish coat has been applied, these are to be cut out, dove tailed and refinished before the painting is done.

TILE AND MARBLE WORK

SCOPE: This work includes the furnishing and setting of all toilet room accessories, floor tile, base and wall tile, marble thresholds, all as scheduled on Drawings.

MATERIALS: Quarry tile to be first grade tile, 6" x 6" x 3/4" Carlyle Tile Company's Red Flash, or approved equal.

Ceramic tile for floors, coved base and wainscot shall be standard grade and as manufactured by Franklin Olean Tile Company, or approved equal. Ceramic tile for floors is to be in selected colors and pattern. Base to be 4" and cap to be 2" bull nose, both black glazed. Wall tile to be 4½" x 4¼" cushion edge matt finish, color selected.

Where windows occur in tile walls, the tile is to return with the plaster jambs and samples of all tile proposed for use shall be submitted to the Architect for approval prior to ordering same.

Sand to be Rollo or approved equal. Cement to be an approved brand of American-made Portland Cement.

PREPARATION OF SURFACES: All surfaces are to be cleaned and wetted before applying tile bed.

SETTING: On horizontal surfaces, the bed is to be not less than 1" thick and composed of one part Portland Cement and 3 to 4 parts sand, spread perfectly level. Spread only such quantity as may be easily covered with tile before initial set. Lay tile sheets to a straight edge after dusting the setting bed uniformly with Portland Cement. Finish joints as hereinafter specified.

On vertical surfaces, even same with a scratch coat of at least 1/4" and composed of 1 part Portland Cement to 2-1/2 to 3 parts sand. While still plastic, score deeply and permit to set at least 24 hours but not more than 48 hours before applying float coat composed of 1 part Portland Cement, 1/2 to 1 part lime putty and 3 to 4 parts sand. Moisten scratch coat before applying float coat, and then apply only such quantity as may be covered before its initial set. Back each unit of tile with neat Portland Cement Paste before setting.

JOINTS: Fill joints on each sheet of tile with dry Portland Cement. Back each sheet of tile with a neat cement paste. Grout between individual tile and each sheet uniformly, flush and true. Joints in vertically laid tile shall be 1/16". Quarry tile areas to have 3/8" joints.

CLEANING: All tile must be carefully and thoroughly cleaned after setting, and left in a first class condition without any broken, chipped or cracked tile. Should this cleaning establish the fact that certain tile are unevenly laid and out of plane, such areas are to be cut out and relaid.

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TOILET ROOM ACCESSORIES: Furnish and install at locations and heights approved by the Architect, the following accessories:

One (1) Soap Holder, Fairfacts No. F-821, centered above each lavatory.

One (1) Soap Holder Fairfacts No. F-194, in each shower.

One (1) Mirror is to be centered above each lavatory. Mirrors to be 18" X 24" copper back 1/4" plate, with waterproof felt backing and arranged for concealed hanging on four screws. Mirrors are to have 1.2" stainless steel frames, corners neatly mitered and finished smooth. Mirrors are to be as manufactured by Albert Voight of Philadelphia, or approved equal.

One (1) approved chronimum plated metal paper holder for folded paper attached to the partition and/or wall near each water closet.

MARBLE WORK

GENERAL: All marble to be of the best grade of the kinds selected to be truly worked and jointed and free from cracks, seams and cutters. All headers are to be placed at points least conspicuous, and all work must be in strict conformity with the best usages of the trade.

SCOPE: The work under this heading including all labor, equipment and material necessary to complete the marble installation as shown on drawings and specified hereinafter.

MARBLE: All marble to be of first quality stock and as per samples selected and approved by the Architect. Samples are to be submitted in duplicate.

Marble shall be as follows: Lobby Marble for walls use Granox Golden Buff, for Lobby Base use Dark Cedar Marble, or approved equal. For all other marble, use Acme Pink, or approved equal.

MARBLE THRESHOLDS: Furnish marble thresholds at all doors between areas having ceramic tile floor on one side and any other type of floor finish on the other made of white Georgia Marble. Same shall be the full width of the door jamb and 1-1/2" thick, and shall be installed in a neat and workmanlike manner.

INSTALLATION: Marble to be cut true to line and angle and polished on exposed face and on exposed edges. The back of all bedded marble to be given a coat of shellac before erecting. Anchor marble securely. Where mortar is used, it shall be composed of 1 part of an approved non-staining White Cement and 3 parts of clean washed sand.

The marble shall come to the job properly crated or otherwise protected, and any marble that is broken or damaged will be rejected.

All work shall be carefully fitted at the shop before shipment. Patched, chipped, broken or otherwise defective pieces of marble shall not be set. Any stains that cannot be removed with clear water will be considered a defect. Should any marble be damaged or be found to be defective after being set, it shall be removed and replaced with new material.

The Contractor shall protect and be responsible for all marble work until final acceptance and he shall make good any damage done up to that time. No traffic shall be permitted near the marble during the setting period. At completion of the job all marble work shall be carefully washed and cleaned, leaving same free from plaster stains, discoloration and other defects.

ACOUSTICAL TREATMENT

WORK REQUIRED: This work shall include all labor, materials and equipment necessary to a complete installation of the acoustical tile in areas so scheduled.

INSTALLATION: In all areas to receive Acoustical Tile as indicated on Finish Schedule, a rodded brown coat of plaster base will be provided by Plastering Contractor. See PLASTERING Section of these Specifications.

Acoustical Contractor shall examine plaster surface to which he applies his tile and, if not suitable, shall notify the General Contractor in writing of his exception and shall not proceed with the installation of acoustical tile until he satisfies himself that the surfaces meet the conditions specified under PLASTERING. It is understood that when the Acoustical Contractor proceeds with installation of tile he accepts the surface provided him as satisfactory.

Acoustical tile shall be securely cemented to brown coat of plaster in strict accordance with manufacturer's specifications. After the cement has set for not less than three days, the tile shall be conceal-screwed to the plaster with No. 3 x 3/4" wood screws in the corner perforations, four (4) screws per tile for the 12" x 12" material and six (6) screws for the 12" x 24" material. The finished surfaces of the acoustical area shall be level and even, and all tile lines straight and true. Nothing but a first class job will be accepted.

Where acoustical treatment is scheduled in areas not having wood cornice of picture mold, the acoustical contractor shall furnish and install No. 130 Celotex mold, covering the joint between ceilings and walls.

Where wood ground is indicated at edge of plaster borders, this ground shall be installed securely by Carpenter Contractor. Acoustical tile shall be screwed to this ground as detailed.

MATERIALS: Acoustical materials shall conform to all requirements of Federal Specifications SS-A-118 a. Type LL, Class B, Grade 8, and shall be of cane fiber, chemically treated to prevent dry rot, fungus growth and termite attack. A. M. A. tests shall govern.

All acoustical tile shall be 12" x 12" tile, with slightly beveled edges, and, laid in diagonal pattern with plain 6" borders, except as otherwise noted. All half tile at borders to be factory cut and beveled.

The acoustical tile on the main ceiling panel and wall areas of the Auditorium, the ceiling of the Choral Room and ceiling of the Stage adjacent to the Choral Room, shall be Type C-2 Acousti Celotex, or approved equal.

Add #5
#1

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See Bull #5 item 2 for new #

~~The acoustical tile on the ceilings of the Music Practic Rooms, Audio-Visual Room and wall panel (straight pattern) of Audio-Visual Room shall be applied to 1/2" x 3" Celotex Fiberboard furring. Acoustical tile for Band Room Ceiling shall be 12" x 12" x 1", Type C-8 Acousti Celotex applied to 1" x 3" Celotex fiberboard furring in straight pattern without border.~~

PAINTING: Acoustical tile shall be factory painted two coats with Duo-Tex, oil base, washable, fire-retarding paint, either at the factory or job painted after installation. The job painting shall consist of two or more coats as may be required to secure complete coverage without shadows or high lights. The acoustical contractor shall apply the paint as above specified, and shall be responsible for same. Painting by others will not be approved.

GUARANTEE: All materials and workmanship shall be guaranteed for a period of one year from date of completion and this Contractor shall replace any inferior material, without cost to the Owner, during this period.

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See Item 3 Bull #5
re Audit. Floor
ribbed Rubber Runners &
"B" T.I.

ASPHALT TILE FLOOR

SCOPE: The General Contractor shall provide properly prepared under-layment upon which this Contractor will apply the tile. This base to be steel trowelled, level, and/or true.

This Contractor shall furnish all labor and material necessary for the proper installation of all asphalt tile and rubber base as scheduled on Drawings and as specified.

Tile will not be required under built-in cabinet work.

ASPHALT TILE: All areas scheduled and/or detailed for asphalt tile are to be covered with Mastic Tile Corporation of America's factory waxed marbelized Ma-ti-co asphalt tile flooring, or approved equal asphalt tile, 1/8" thick. Colors to be selected by Architect from Group C Grade with 30% light reflectivity for instructional spaces.

Tile in corridors to be as manufactured according to Federal Specifications SS-T-306, at 77- degrees, one minute hardness reading to be not less than .012" nor more than .015".

GREASEPROOF TILE: Lay 1/8" Greaseproof C Color Tile in areas so scheduled. This tile to be immune to grease as would be expected to occur in the areas designated.

RUBBER BASE: Rubber Base to be Extruded "Set-On" type of flexible rubber, 1/8" thick and 4" high, color of base shall be black. Base shall have rounded top and coved bottom.

APPLICATION: The concrete slab is to be dry and have a primer and an asphalt mastic mopped or trowelled on. Proper levelling shall be done by means of Asphaltcrete, or approved equal, primer and a filler compound of proper proportions of Portland Cement, emulsified asphalt, clean sharp sand, and just enough water to produce a stiff plastic mix, suitable for proper trowelling.

Apply all tile in strict accordance with manufacturer's printed directions. Check for presence of moisture before laying.

Maintain 70 degrees F. minimum temperature in rooms for 24 hours before and during time of laying tile and for 48 hours after laying. Stack tile in rooms at above temperature 24 hrs. before laying.
Except as otherwise designated asphalt tile shall be 9" x 9" square and laid in a diagonal pattern with grain reversed in alternate tile. Joints shall be tight and in true alignment. Tile shall be laid symmetrically about center lines of rooms or spaces.

Set rubber base straight and true in rubber cement and in accordance with manufacturer's directions. Internal and external corners shall be neatly formed at the job to meet the approval of the Architect.

Install stainless steel or aluminum edging strips where required by exposure of edge of tile. Fasten strips to floor with screws spaced 12" apart. Strips shall be B & T Metals Company's No.114-3 or approved equal.

PAINTING

SCOPE: This work includes the furnishing of all materials, labor and equipment necessary for a complete paint job for all areas and materials hereinafter specified and/or scheduled on Drawings.

GENERAL: Should paint be misapplied to any article or material other than that for which it is intended, it must be wiped off immediately. The Painter must protect the work of other trades and clean up following his work.

All painting must be done in a thoroughly workmanlike manner and in strict accordance with the printed directions of the manufacturers of the materials used. If the Painter finds that any of the various surfaces are not in a proper condition to receive paint, that is, if they are defaced, contain too much moisture, etc., he is to so report to the proper parties. The Contractor will be responsible for poor results caused in this manner or otherwise.

No exterior painting will be done in rainy or foggy weather, nor until after the same is entirely cleared up and all moisture disappeared; nor shall any interior painting be done in such weather unless the building is artifically heated.

COLORS AND SAMPLES: Colors for all work are to be as selected by the Architect. The Painter will prepare, for each separate operation, two 6" x 18" sample panels for approval before commending any work. All work shall equal that of the approved samples. The samples shall show the separate coats and stages of the painting, and one such sample shall be left in the job office until completion of the job.

PREPARATION OF SURFACES: All surfaces must be in good condition, thoroughly clean and dry, all wood properly sanded, and all nail holes puttied, before the painting is commenced.

Immediately after woodwork, which is to be painted, is in place, shellac all knots and sap with a pure grain alcohol shellac and put on the priming coat. Where priming is done at the mill the knots, and sap of course, will be shellacked at the mill. All mill priming must be executed by the Painter and not by the mill. Priming coat to be colored similar to final coats.

Do not sand paper plaster surfaces to be painted. Before painting any plaster, surfaces shall be first tested with a moisture testing device especially designed for this purpose. No paint or sealer shall be applied on plaster when the moisture content exceeds 5.5% as determined by the testing device. Test sufficient areas in each space, and as often as necessary to determine the proper moisture content for painting.

Before painting, remove hardware, accessories, plates, lighting fixtures and similar items or provide ample protection of such items. Upon completion of each space, replace and unmask the above items. Remove doors if necessary to paint bottom edge. The Painting Contractor shall use only skilled mechanics in removing the work of others and shall be held strictly responsible for the replacement of all removed items unimpaired.

MATERIALS: Unless otherwise specified, all paint for this job shall be Pratt and Lambert's, Pittsburgh, Devoe and Reynolds, DuPont, or Sherwin Williams. The following mentioned brands are used as a basis of quality, which quality must be met in every respect by any other paint submitted for approval.

SCHEDULE OF PAINTING:

EXTERIOR WOODWORK: All exterior woodwork is to be primed on all sides at the mill before shipment.

First Coat: Pratt and Lambert Exterior Primer thinned to brushing consistency with turpentine. Tint primer with Pratt and Lambert Oil Colors to approximate shade of finish coat.

Second Coat: Pratt and Lambert Exterior Paint of selected color thinned with one pint of turpentine to each gallon.

Third Coat: Pratt and Lambert Paint of selected color to which add one quart of pure linseed oil to each gallon.

INTERIOR WOODWORK: First Coat: Pratt and Lambert Interior Primer reduced in accordance with manufacturer's directions. Color selected.

Second and Third Coats: Pratt and Lambert Cellutone Semi-Gloss, color selected and as it comes from the can.

Interior doors are to be given a very light stain to equalize the wood, then sanded and given two coats of 61 Floor Varnish, sanding between coats and rubbing the last coat. An additional coat of No. 61 Semi-Gloss may be used in lieu of rubbing.

WOOD HAND RAILS: Wood hand rails are to be finished same as specified above for Interior Doors.

PLASTERED WALLS: First Coat: Pratt and Lambert's Lytall Double Duty Primer applied in accordance with the manufacturer's directions.

Second Coat: Pratt and Lambert's Lytall Flowing Flat Wall Paint, color to be selected, and applied in accordance with manufacturer's directions.

Exposed pipe, pipe covering, and heating apparatus in areas other than Boiler Room are to be painted similar to walls.

PLASTERED CEILINGS: All plaster ceilings to be painted One Coat of Pratt and Lambert Solidex.

ACOUSTICAL TILE CEILINGS: The painting of acoustical tile ceilings is provided for under the acoustical section of these specifications.

UNPLASTERED INTERIOR MASONRY WALLS AND INTERIOR CONCRETE: Where these are scheduled for paint, thoroughly clean and, when dry, wash down with a zinc sulfate solution (4 pounds of zinc sulphate crystals per gallon of water) and allow to dry for 36 hours.

Finish with one coat of Wondercote, manufactured by L. Sonneborn Sons, Inc., New York 16, N. Y., and shall be applied according to the manufacturer's printed instructions. Color as selected by the Architect to be with alkali-resistant colors in oil. Strain Wondercote before tinting.

EXTERIOR AND INTERIOR METAL WORK: All exterior and interior metal work, other than aluminum, copper and galvanized iron, to be thoroughly cleaned of rust, oil, etc., and given:

First Coat: Pratt and Lambert Metal protective paint as it comes from the can. If the first coat becomes damaged or scuffed apply a second coat of same. If factory primed, omit first coat.

Second Coat: Pratt and Lambert Exterior Paint as specified for Exterior Woodwork.

Third Coat: Same as second coat, both colors selected.

Any metal "trim" which usually has a factory prime coat, is to be given two coats. Damaged factory prime coat is to be touched up and leveled before painting. Failure to do this before painting will be grounds for rejection and repainting.

GALVANIZED IRON WORK: All galvanized iron or other treated metal shall be (1) thoroughly cleaned with naptha using stiff brush to remove oil, etc., (2) apply a coat of Zinc Sulphate, 1 lb. to 1 gallon of water, (if the surface turns black, it is clean), (3) rinse thoroughly with clear water and scour with brush if necessary to remove sludgy deposit. Rinsing may be done immediately following application. After drying thoroughly:

First Coat: Pratt and Lambert's Galvanized Iron Primer, mixed according to directions. Allow twenty-four to thirty-six hours before second coat.

Second Coat: Pratt and Lambert's Exterior Paint, color selected.

Third Coat: Same, both as they come from the can.

ALUMINUM AND COPPER: No aluminum or copper is to be painted. However, aluminum windows are to be protected and kept clean after installation.

HEATING APPARATUS: All exposed heating pipe, radiators, convector cabinets, etc., in plastered areas is to be thoroughly cleaned and painted:

First Coat: Pratt and Lambert Lytall Interior First Coater, reduced with one (1) quart of turpentine to the gallon and tinted.

Second Coat: Lytall Flowing Interior Wall Paint, color to match that selected for walls.

Pipe covering, convector heating cabinets and grilles are to be painted along with and as specified for plaster walls, except that the convector cabinets will come factory primed.

If any other apparatus comes with factory prime coat, omit the above first coat.

PARAPET WALL, ETC.: All exposed brickwork on inside face of parapet walls above roof flashing up to under side of Limestone Coping shall be given one coat of Pratt & Lambert's exterior primer and two coats of Pratt & Lambert's exterior cement and studdo paint.

WOOD FLOORS: After the floors have been sanded smooth as specified under Carpentry and Millwork, sweep floors perfectly clean and permit no one to walk on them.

Apply three coats of Pratt and Lambert's "61" Gymnasium Floor Finish in accordance with the Manufacturer's printed directions.

It will be the responsibility of this Contractor to protect the floors. No one but the finishers shall walk on floors until last coat has been applied and is thoroughly dry. The finished floors shall be properly protected until acceptance of building by Owner.

New [illegible] High School Add.
#50-9

PLUMBING

GENERAL: The Specifications and the accompanying drawings are intended to provide for the furnishing and installation of a complete plumbing system, including all plumbing; plumbing fixtures; cold and hot water supplies and piping; soil, waste and vent piping; drains, water pipe and equipment installation; gas piping, storm and sanitary sewers, and their connections as shown on drawings or specified. Attention is called to certain items of equipment and/or apparatus, which are shown on drawings as being furnished by others than the Plumber but to which the Plumber is to run and make connections under this contract as noted or specified, and to furnish such fittings as may be called for.

PLUMBING CODE: The Plumbing Code of the locality in which the work is to be executed, and the regulations of the Local Water Department, which shall be followed in this work, are to set up a minimum quality of labor and material. This does not relieve the Contractor of the workmanship or materials called for in these Specifications or shown on the Drawings and which requirements may be above the minimum required by said Code or regulations.

The Plumbing Work shall include all permits, fees, charges, etc., by the City, State or County, necessary for the complete installation of this work, and the Owner shall be furnished free of charge all certificates of inspection by authorities having jurisdiction.

WORK FITTED TO THE BUILDING: The work is shown on the drawings as nearly as possible in its correct location, but, in all cases, it is to be fitted to the building. The Plumber shall make any incidental deviations required by structural conditions, and he shall make minor alterations in the work to suit trim or to avoid other parts of the work.

EXISTING WORK: In various areas such as Home Making Department and Chemistry Laboratory, various pieces of equipment are to be relocated or disconnected as indicated on Plans or as directed.

GENERAL NOTES: All plumbing fixtures to be equipped with hot and cold water stop cocks, as specified elsewhere in these specifications. No water pipes are to be buried in floor construction. All water lines shall be properly graded and shall be free from traps or pockets except where indicated.

Should any work, shown on the Drawings or specified herein, be construed as contrary to the Code, Ordinances or Laws of City, County or State, same shall be executed in accordance with such laws, Ordinances or Codes, but not until the point or points have been brought to the attention of the Architect.

EQUIPMENT SELECTION SUBMITTALS AND APPROVALS: When equipment is specified herein or on drawings by Manufacturer's name or number, this shall denote the minimum requirements as to quality, capacity, type, function and/or performance. Proposed substitute equipment must be submitted to the Architect for approval within 4 weeks after award of contract. 7 Copies of ALL equipment to be used on job, bound in brochures, must be submitted within 4 weeks after award of contract.

GUARANTEE: The Plumbing Contractor, through the General Contractor, shall guarantee all labor and materials for one year from the date of the acceptance of the work and agree to repair, free of charge to the Owner, any defects that may occur within that time, unless such defects are clearly the result of improper use by others not under the control of the Plumbing or the General Contractor.

PIPE, GENERAL: All pipe shall be made in accordance with the "Standard Specifications of the American Society for Testing Materials", for pipe of each classification, and shall meet Local Code requirements.

Each length of pipe. fitting, trap, fixture, etc., used in this work shall be stamped or indelibly marked with the weight or quality thereof and the maker's name or mark.

Proper connections shall be provided at all points where different types of pipes are joined and connections shall be such as to prevent electrolysis.

The minimum number of threads shall be left exposed on all threaded pipe joints.

COLD WATER PIPING: Cold water lines shall be run as shown on the drawings and connect to all plumbing fixtures, wall hydrants, hose bibs, etc., and have capped openings for future connections where indicated.

HOT WATER PIPING: From the point of connection to existing piping run hot water piping to lavatories, sinks, service sinks, and other points indicated on the Drawings. A hot water circulating line shall be run from the end of hot water mains back to the point of connection indicated on the drawings.

SOIL, WASTE AND VENT LINES: A system of soil, waste and vent piping shall be installed, as indicated, connecting the discharge outlets of fixture traps, floor drains, equipment outlets, etc., to the house drains and sewer, with vent connections through the roof as indicated.

All floor drains shall be installed, connected and vented as indicated on the drawings or as required by the Local Plumbing Code.

Horizontal soil, waste and drain lines grade to have 1" fall in every 4' where possible, but in no case shall grade be less than 1" in 8'. All piping shall be run on a continuous fall to outlet and be securely supported in place.

CAST IRON PIPE: All soil, waste and vent piping in building and above ground shall be service weight cast iron. All underground pipe shall be service weight cast iron, unless otherwise specified or shown on Plans.

All pipe and fittings shall be sound and free from holes, cracks, or defects of any kind.

All changes in pipe size on soil, waste, vent, and drain lines shall be made with reducing fittings, or recessed reducers.

Cast iron hub and spigot pipes shall generally extend not less than five (5') feet from foundations of outside walls of the building, unless otherwise indicated.

ACID-RESISTING PIPE AND FITTINGS: All shall be Duriron with acid-resisting packing and lead caulked joints.

TILE PIPE AND FITTINGS: Tile pipe and fittings used on exterior of building shall be First Grade salt-glazed, vitrified earthenware.

Tile pipe shall have joints caulked with picked oakum and G. K. joint compound.

COPPER PIPE: All water pipe which is buried in the ground under floors, and the extension of these pipes to 12" above these floors, shall be Type "K" soft copper pipe, unless otherwise noted.

All cold and hot water supply pipe above the ground shall be hard copper pipe, type "L", unless otherwise noted.

All copper pipe is to have sweat pattern fittings and is to be equal to that manufactured by Chase, Revere, or Bridgeport.

FITTINGS FOR COPPER PIPE: Fittings in copper pipe lines shall be solder fittings cast or wrought pattern suitable for copper tubes. Copper fittings shall be iron pipe size and thickness if required by fixture connections.

Pipe and fittings shall be installed and soldered following manufacturer's specifications for pipe and fittings used, and service requirements. All joints must be sanded clean.

The copper pipe, solder fittings, solder and flux shall be of one manufacture.

Solder shall be of the type that prevents electrolysis. No saddle tees or other such fittings are permitted.

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BRASS PIPE: Exposed pipe and fittings for fixtures shall be red brass chromium plated and of iron pipe size. All lavatory waste pipe exposed between the lavatory and the wall or floor shall be No. 18, B & S gauge. Proper connections shall be provided at all points where brass pipe is connected to other types of pipe. Fittings in brass pipe lines shall be cast brass, chromium plated where exposed at fixtures, malleable iron pattern, and shall be of approximately the same composition as the pipe.

GAS PIPING: The Plumbing Contractor shall make connections to the equipment in the lavatories, Homemaking Department, and all equipment requiring gas and shall verify each outlet location and size with the Equipment Contractor or Heating Contractor. Install a full size gas cock on each connection to each piece of equipment.

All gas piping shall be standard weight black pipe with black malleable banded fittings for threaded joints. The entire installation shall be done in accordance with the requirements of the Gas Company and the American Gas Association. Make connections to all fixtures requiring same. All joints underground or in furred areas must be welded.

TEST OF GAS PIPING: Testing of the system shall be done as required by the Local Plumbing Authority and shall be conducted in the presence of the Local Representative and the Authorized Representative of the Architect. All lines shall be proven tight.

Square head cocks shall be installed in the gas piping where indicated on the Plans or where required for equipment installations.

VALVES (FOR THE WATER SYSTEMS): Valves, sill cocks, hose bibbs, etc., shall be furnished and installed as indicated on the Drawings and as described herein.

Whether shown or not, valves shall be installed as follows:

(1) For all branch service water lines run in concealed spaces; (2) for each fixture group supply as indicated, and for each remote fixture; (3) Valves with lock shields and keys shall be provided in hot water circulating lines.

All valves shall be suitable for a water working pressure of not less than 125 pounds per square inch. Valves 2 inches and smaller shall be all brass or bronze. Valves 2-1/2 inches and larger shall have iron bodies with brass or bronze trim including stem of gate and globe valves. Valves shall have flanged bodies where indicated or required. Where practical, all valves shall be of one manufacture. All valves shall be equipped with proper composition renewal seats and discs.

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Gate valves shall be wedge type with double discs and seats. Gate valves 2-1/2 inches and larger shall have renewable seats. Gate and globe valves 2-1/2 inches and larger shall be outside screw and yoke pattern. Gate valves shall be the free swing regrinding type.

Valves for all copper pipe lines shall be of the special solder type, with solder connections for installation in copper lines, except where adapter fittings or union connections are required in this installation. All valve bodies shall be of brass, bronze, copper lines, except where otherwise noted. Contractor shall use care to supply heat to the copper pipe joints at valve connections and not directly to the valve bodies.

HANGERS AND SUPPORTS: Hangers and supports shall be as follows:

Cast iron soil pipe, water pipe, and tile pipe underground shall be firmly bedded on solid ground under the body of the pipe, or approved supports provided. Soil, waste, and vent stacks shall be well supported at the base by means of piers or heavy hangers close to the bottom of the riser and at the floor by means of heavy iron clamps. All risers shall have proper allowance made for expansion, contraction shocks and strains.

Each horizontal length of cast iron pipe, not counting the fittings shall be firmly ironed to the walls, supported from ceiling or otherwise suitably supported. Each fitting in horizontal lines shall be adequately supported either by support of the fittings or by support of connecting pipe immediately adjacent to the fitting.

All hangers to be same type used in existing building.

All changes in horizontal direction of soil and waste pipe shall be made with long radius fittings, or with Y branches and 1/8 or 1/16 bends with provisions being made as indicated for cleanouts or extensions. Where special fittings are required, they shall also be provided by the Contractor.

Size hanger rods as recommended by Grinnell Company.

Supports and hanger spacing for horizontal lines of copper pipe shall be as indicated elsewhere. In locations where a number of fittings may be necessary, additional hangers shall be installed so as not to place severe strains on the connecting pipe lines.

Hangers for copper pipe shall be Grinnell Company's Figure 97 C. P. adjustable pipe ring or approved equal. Hangers and rods shall be heavily copper plated.

Supports for chromium plated brass pipe shall be brass, chromium plated.

Exposed piping shall be so installed that when the covering is applied it will not come in contact with adjacent surfaces.

Use concrete inserts or beam clamps as required.

PIPE JOINTS: Joints for cast iron pipe and fittings shall be caulked joints, made with gaskets of picked oakum and not less than twelve ounces (12 oz.) of ingot lead for every inch of diameter of pipe. All joints shall be thoroughly caulked and made perfectly air and watertight.

Joints between lead pipe and cast iron pipe shall be made with approved brass ferrules solder-wiped to the lead pipe and caulked into the hub of the iron pipe.

Copper pipe connections to fixtures shall be iron pipe size.

Joints in lead pipe shall be solder-wiped joints. Joints in lead pipe and wrought iron pipe fittings shall be made with heavy brass soldering nipples.

Joints between lead and brass pipes shall be wiped joints.

Joints between brass traps and brass pipes shall be screwed joints.

Iron and brass supply pipes or copper to iron, or brass supply pipes shall be put together with ground joint brass unions, or other specifically made fittings so they may easily be taken apart and so as to prevent electrolysis.
Joints in steel and wrought iron pipes shall be made up with joint compound having graphite base that will be odorless and tasteless and shall be applied to the male threads only. Ream all piping before threading.

Flanged joints shall have best grade compressed asbestos ring gaskets, 1/16" thickness.

UNIONS: Unions on drainage pipes on fixture side of traps may be slip or flanged joints with impregnated asbestos gaskets.

TRAPS: All fixtures shall be provided with traps. All traps shall be set perfectly true and level. All fixtures and traps shall be provided with cleaning screws or caps. Cast iron traps shall be provided for all floor or area drains. All traps shall be properly vented.

CLEANOUTS: Cleanouts shall be of all ferrous metal construction, except ferrules and plugs shall be brass, and shall be provided in soil and waste lines as indicated on the drawings, and/or as specified in Local Plumbing Code.

Provide cleanouts at the bottom of each exposed fixture trap which is not integral with the fixture, at the end of each branch drainage line, at each change in horizontal direction, at the foot of each soil and waste stack, and in horizontal lines inside of the building at intervals as required by the Local Code.

All cleanouts in pipes inside of the building shall consist of brass screw ferrules with heavy brass plug, with square or hexagonal nut. Cleanouts in floor or wall construction shall be extended to and brought flush with floor or wall surface and plugs shall have countersunk heads. Cleanouts shall be so located and installed that they may be readily accessible and removable for cleaning of lines. Cleanouts in piping outside of building shall extend up to grade with cleanout plug flush with finish grade or finished pavement.

FLOOR FLANGES FOR WATER CLOSETS: Floor outlet water closets shall be connected to soil pipe by means of approved cast brass floor flanges, soldered to lead stub. The joint between water closet trap and the floor flanges shall be made perfectly tight by means of an approved gasket.

EXPOSED PIPING: All piping to be concealed unless impossible to do so, and so approved by the Architect. Exposed pipe in finished rooms shall be chromium plated and shall have escutcheons at wall, ceiling and/or floor.

COVERING (NON-CONDUCTING) ABOVE GROUND: All hot water and hot water circulating lines, all cold water supply piping from the point of connection to the fixtures, with the exception of the exposed branch connections at the fixtures, shall be covered with first class, removable, non-conducting covering. Covering shall be sectional woolfelt covering 1" thickness having an all service lining and canvas jacket pasted on. Fittings shall be covered with a plastic cement of corresponding material to the sectional covering, containing not less than 35% magnesia or asbestos, and of same thickness as the pipe covering, with hard, smooth, surface. Unions shall not be covered. Covering shall be furnished with standard 8 ounce canvas jacket pasted in place and a corresponding jacket pasted over the fitting insulation. Each section of covering shall be wired in place and banded with aluminum bands not over 18" apart. At each elbow there shall be two (2) and at each tee there shall be three (3) bands. At any open ends in the pipe covering such ends of the covering shall be finished by rounding off with asbestos cement and the canvas jacket shall be brought over the cement filling and drawn tightly around the pipe by means of a draw string.

INSULATION OF HOT WATER SUPPLY AND RETURN PIPING UNDERGROUND: All hot water supply and return piping underground shall be insulated with 1" P. C. Foamglass. Inside of insulation net to pipe shall be coated with Insulmastic No. 4010, and insulation shall be wired to pipe with stainless steel wire. Outside of insulation shall then be coated with Insulmastic No. 4010, and wrapped with glass fabric. Outside surface of glass fabric shall be given a 1/16" coat of Insulmastic No. 4010.

A flexible fiber glass ring 1" thick shall be provided inside of waterproof wrapping every 50' and/or between each 2 elbows. Ring shall be installed compressed approximately 2/3 of its maximum compressibility.

Insulation shall be installed by a mechanic experienced in this type of insulation work.

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EXCAVATING: The Plumber shall do all excavating for piping. After pipe have been installed and inspected, the excavations shall be filled, tamped and puddled, and surplus earth shall be removed. All walks, etc., cut shall be repaired as necessary.

ROOF FLASHINGS: All pipes passing through flat roofs shall be flashed with 8 pounds sheet lead, using a vent connector which shall consist of cast iron body with provision for caulking and waterproofing against vent pipes and cast iron clamping flange for attaching roofing felts, clamping flange to be clamped to body with not less than 5/16 brass bolts. Lead shall extend at least 8" from edges of drain.

TESTS: Testing of the system shall be done as required by the local Plumbing Code and shall be conducted in the presence of the Local Representative and the Authorized Representative of the Architect. All lines shall be proven tight.

All hot and cold water piping shall be tested with water at a gauge pressure of 200 pounds per square inch, in the presence of and to the satisfaction of the above representative and shall be free from leaks before acceptance.

The entire drainage and venting system shall have all necessary openings plugged to permit the entire system to be filled with water to a level of the highest vent stack above the roof. The system shall hold this water for thirty (30) minutes without showing a drop in level greater than four (4) inches. Subject to the approval of the above representatives, the drainage and venting system may be tested in section.

All equipment supplied by the Contractor shall be tested before acceptance under full capacity or full load conditions specified and the performance of each piece of equipment shall be satisfactory to the Architect's authorized representative.

CLEANING AND MAINTENANCE: All surplus pipe line material, tools, and temporary structures shall be removed by this Contractor and all dirt, rubbish, and excess earth shall be hauled to a dump provided by the General Contractor. The site of construction shall be left clean, to the satisfaction of the Architect or his authorized representative.

PLUMBING FIXTURES: Contractor shall furnish and install all plumbing fixtures complete, with all equipment, fittings, trimmings, etc., as indicated and specified. All fixtures shall be Grade "A". The name and trademark of the manufacturer shall be printed or empressed on all closets and lavatories; and a label which cannot be removed without destroying it, containing the Manufacturer's name or trademark and the quality or class of the fixtures shall be affixed to all fixtures and not removed until after the work is accepted.

All fixtures shall have stop cocks in the supply lines.

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Where fixtures are to be hung on a wall, the wall back of the fixtures shall be reinforced properly to provide support for the fixture bracket.

Except as otherwise specified all exposed metal parts are to be of brass chrome finish.

The following fixtures are given as a basis of quality. Fixtures by Standard or Kohler, of equal quality, weight, type, etc., will be approved if found equal in every respect. Complete lists with numbers must be submitted and, if approved, the approval must be in writing.

All Lavatories: Crane 1-240 Norwich 20 x 18 vitreous china wall type lavatory with integral back, wall hangers and fitted with 8-140 Embassy supply and pop-up waste, 8-300 angle supplies with stops, 8-325 reducers and 8-394 1¼" cast brass P trap with cleanout.

Water Closets -- Floor Mounted: Crane 3-300 Santon siphon jet elongated rim bowl fitted with No. 11DFYV Sloan Royal flush valve with vacuum breaker, Church No. 9900 white Mol-Tex open front, open back seat, closet floor flange, flange bolts and china caps.

Water Closets -- Wall Hung: Crane 3-452 Walton siphon jet elongated rim bowl fitted with No. 143YV Sloan Royal flush valve with vacuum breaker, Church No. 9900 White Mol-Tex open front, open back seat, Zurn Series Z-1205-S chair carrier with foot support, bolts, nuts and washers.

Urinals -- Exposed Flush Valve: Crane 7-104 Expedio china blow out urinal with 1½" top inlet, 2" outlet, fitted with No. 180TYV Sloan Royal flush valve with vacuum breaker, steel wall plate behind wall and bolts to fasten urinal to wall plate.

Urinals -- Concealed Flush Valve: Crane 7-103 Expedio china blow out urinal with 1½" back inlet, 2" outlet fitted with No. 190 TYV Sloan Royal flush valve with vacuum breaker, steel wall plate behind wall and bolts to fasten urinal to wall plate.

All Drinking Fountains: Crane 6-530 Erie vitreous china drinking fountain with 8" high back, two 6-546 supply fittings with angle stream bubblers, vandal-proof base, automatic stream regulator, 8-452 waste fitting and 8-394 1¼" cast brass P trap with cleanout.

Service Sink for Shop: Crane 7-500 Duraclay, size 20 x 18 vitreous service sink with 8" high back, 8-101 rough chrome plated double utility faucet, and 7-620 3" enameled inside P trap standard with metal strainer.

Sill Cocks: Where indicated on Plans, Plumbing Contractor shall furnish and install a 8-340 3/4" lawn faucet with hose end.

Wall Hung Water Closets shall be hung using Zurn hangers for wall thickness available. Flush valves shall be concealed. See Plans for locations and typical installation details. All water closets not so indicated shall be floor mounted with exposed flush valves.

Urinal with Concealed Flush Valves shall be located where shown on Plans. All others shall have exposed flush valves.

Homemaking and Chemistry Laboratory: The existing equipment in these Department shall be disconnected by the Plumber. All services disconnected must be kept below floor or flush with wall. The General Contractor will move this equipment into the new areas and set into place. The Plumbing Contractor shall make all new connections required by this equipment, including cut-off valves or cocks on each water or gas service. All piping within equipment must be put back into first class operating condition. All new equipment in new location in the above Department will be set in place by General Contractor, and the Plumbing Contractor must make all service connections required and furnish all trim required by these pieces of equipment.

Downspout Boots shall be cast iron, rectangular, size shown on Plans, equal to Haley Warren, with wall mounting lugs.

Shock Stops: Shock Stops shall be equal to Wade sealed chamber type of size shown on plans. Install a 1½" No. 67 on top of hot water outlet riser on large storage tank.

Area Drains shall be Josam V-124, or approved equal.

Floor Drains: The Plumbing Contractor shall furnish and install where shown on the Plans, Josam Series 300, Type 303, or approved equal, cast iron floor drains with double drainage flange, weepholes, bottom outlet and adjustable brass strainer.

Floor and Ceiling Plates, Thimbles, Etc.: At all points where pipes pass through finished rooms, floor, wall and ceiling plates shall be provided, and these plates shall be of a type that will remain permanently in position. Plates installed at floor lines shall be triple chromium plated plates, and those installed on pipes passing through walls or ceilings shall be finished in prime coat finish for painting to match the surrounding surfaces.

This Contractor shall furnish, set, and anchor all sleeves, thimbles, etc., required to allow passage of his pipe through floors, walls and ceilings. All thimbles and sleeves shall be of sufficient size to allow for contraction and expansion of the pipe, and where these sleeves are installed in exterior walls at portions below grade, these sleeves shall be caulked water-tight after insertion of the pipe to avoid entrance of water at this point. All sleeves shall be constructed of standard weight genuine wrought iron pipe inserted in the forms before the concrete is poured, and after insertion they shall be filled with sand and completely sealed to avoid entrance of concrete during the pouring. The thimbles required for the passage of pipes shall be constructed the same as specified above for sleeves.

HEATING

GENERAL: This Specification covers the complete installation of the heating system for the Athens High School, located in Athens, Georgia. This work is shown on the accompanying Heating Drawings.

The heating system consists of a low pressure system for heating the new building by means of convectors, unit heaters, wall (fin) type radiation and cast iron ceiling radiators mounted on the ceiling. The Auditorium shall be heated by forced air units hereinafter specified "Gas Fired Heaters for Auditorium". The installation shall be complete with new gas burner in boiler, piping, convectors, unit heaters, heating units, radiators, and all necessary equipment to provide a complete heating installation in every respect.

The drawings and specifications shall be considered supplementary one to another and any work shown and not specified or vice versa shall be furnished and installed as though specifically called for on both plans and specifications.

It will be required that this part of the work be executed by a competent Heating Contractor, through a Sub-contract with the General Contractor. Therefore, under these specifications, all reference to "this Contractor" means the Heating Contractor unless special reference is made to the General Contractor.

ORDINANCES AND PERMITS: All workmanship and materials shall conform to all ordinances of the State, County, City or other authority having jurisdiction.

This Contractor shall obtain, at his expense, all permits necessary for the installation of this work and shall obtain and deliver to the Architect, without charge, all certificates of inspection.

EQUIPMENT SELECTION - SUBMITTALS AND APPROVALS: Where equipment is specified herein or on Drawings by manufacturer's name and/or number, this shall denote the minimum requirements as to quality, capacity, type, function and/or performance. Proposed substitute equipment must be submitted to the Architect for approval within four (4) weeks after award of contract. Six copies of all equipment to be used on job, bound in brochures, must be submitted within four (4) weeks after award of contract.

GUARANTEE: This Contractor shall provide the Owner with a guarantee covering defective workmanship and materials for a period of one (1) year after acceptance by the Architect or Owner. All equipment shall be covered by this guarantee and the manufacturer's guarantee shall not relieve this Contractor of any responsibility for any equipment furnished under this Specification.

CHANGES: The Plans indicate, in general, the location of equipment, piping, etc. These plans are to be followed as closely as possible but dimensions shall be checked at the site and any necessary changes shall be made to accord with structural or unforseen conditions.

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WORKMANSHIP AND PERFORMANCE OF WORK: The Contractor shall perform his work as rapidly as conditions of the building permit and shall keep in charge on the premises, while work is in progress, a competent foreman who meets the approval of the Architect. He will receive and comply with the Architect's directions, drawings, and specifications and he shall supervise the work of all Sub-contractors and workmen.

All work shall be done by skilled labor in the best, most thorough and workmanlike manner known to the trade and all materials shall be new and the best of their respective kinds and where not otherwise specified shall be as the Architect directs. Any inferior or unsuitable workmanship or material, condemned by the Architect, shall be promptly removed and the proper work or materials provided without additional expense to the Owner. All work shall be delivered in an undamaged state ready for operation upon completion of the job.

PERFORMANCE CONDITIONS: The heating system shall be guaranteed to maintain a condition of 70° inside with an outside temperature of 10° F.

APPEARANCE OF WORK: Contractor must maintain, when at all possible, the same appearance in new work as now occurs in existing work, and use same materials or types of equipment unless otherwise approved.

EXISTING WORK TO BE RELOCATED: There is now located in the areas of existing building to be remodeled, several convectors, unit heaters, etc., that are to be relocated to the new building as shown on Plans. There are also convectors that are to be repiped, and also there is some existing piping that is to be relocated or removed as indicated or as required by job conditions.

ELECTRIC WIRING FOR HEATING AND VENTILATION: The Electrical Contractor shall provide electrical wiring including non-fused disconnect switches, from panelboards or breakers, for all motors furnished by the Heating Contractor. The wiring of motor controls, etc., for the proper operation of the heating and ventilation systems shall be the responsibility of the Heating Contractor.

This electrical work by the Heating Contractor shall be done in accordance with the National Electrical Code, and any other local or state codes.

All low voltage wiring for automatic temperature control system including conduit, pull boxes, outlets, flexible cable connectors to each motorized valve operator and other equipment where required, including wiring, etc., will be furnished and installed by the Heating Contractor. All low voltage control wiring shall be not smaller than No. 1 B & S wire with .015" high temperature (80 degree C.), plastic insulation on each conductor, with over all protective cotton braid and otherwise meet the requirements of the manufacturer of the control equipment which it serves. The number of conductors required in each conduit shall be determined from the Control Diagram submitted for approval.

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The control system shall be installed by this Contractor. All wiring to be line voltage not smaller than No. 18 gauge B & S 600 volt wire. All wiring to be installed in conduit and outlet boxes as specified in Electrical Section of these Specifications.

The Electrical Contractor will install all power wiring to motors. This Contractor shall do all control wiring.

WORK IN EXISTING BOILER ROOM: Contractor shall cut pumped return loose from where it now connects to boiler and reconnect to return header at lowest point possible.

Contractor shall install 2 new 3/4" float and thermostatic drip traps with valve and strainers at low points of steam mains on building side of each motor operated valve.

Contractor shall remove the existing gas burner and setting in boiler, including all controls, pressure regulator, gas valve, water feeder and pressure control. These items shall be replaced by new burner and controls covered under "New Gas Burner".

These items removed shall be the property of the Contractor, but he shall give credit on new burner for them.

Contractor shall thoroughly check the boiler and notify Owner, in writing, of the exact condition of boiler.

Contractor shall reset the boiler relief valve for 10 lb. steam operation on boiler.

NEW GAS BURNER: There is now installed an upshot gas burner in the boiler. This burner, setting, controls, etc., shall be completely removed as outlined in Section WORK IN EXISTING BOILER ROOM.

Contractor shall install a "Lo Blast" Power type gas burner complete with the following:

1. Electronic Pilot.
2. High, low and off control.
3. Robertshaw diaphram cut-off valve.
4. M.H-V496 Operator.
5. Main gas pressure regulator.
6. Pilot pressure regulator.
7. Lubricator plug cocks.
8. 1750 RPM 208V 3 phase motor.
9. 208V single phase central system.
10. Dual type constant and intermittent pilot.
11. R-890B Electronic relay.
12. Blower Safety System.
13. Lubricated shut-off cock and pilot adjustment device.
14. Centrifugally operated valve in intermittent pilot line.
15. 4" lubricated plug cock in burner piping maniford.
16. 2 gas pressure gauges.
17. General Controls manual reset valve.

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18. The high, low and off control shall consist of a motorized butterfly gas valve connected with suitable linkage to a louvre type air shutter assembly on blower inlet.

19. A 0-15 lb. high low limit pressure control to operate the motorized valve.

20. A safety high limit control.

21. Operating limit control.

22. A M & M No. 51-2 water feeder with alarm bell.

23. Burner shall have a capacity of not less than 6,750,000 BTU per hour with natural gas 3" W. C. at main gas cock.

24. All other items necessary to properly operate burner or as shown on control diagram.

25. Complete new combustion chamber in boiler as required by the burner, using Babcock & Wilcock No. K-26 insulating bricks. Build as recommended by burner manufacturer so that flame cannot harm any part of boiler.

Burner Manufacturer Representative shall supervise installation of burner, put same in proper operating condition, and submit complete operational report to Architect for approval.

At base of protection relay in flame circuit, install a condulet or junction box. The flame wire should be pigtailed in the above mentioned junction box and shall have a metal tag stating what pigtail is for and the normal test reading.

The final inspection check of the flame circuit output shall show a reading of not less than 2 micro-amps or meet requirements as set up by manufacturer of equipment. Readings must be submitted to the Owner in writing.

See Plans for skematic diagram of burner and equipment. Submit wiring diagram, as previously outlined, for approval.

SUMMER-WINTER CONTROL SEQUENCE CYCLE: Control switch located by thermostat as shown on Plans shall have off-Summer-Winter settings and shall perform the following functions:

1. Summer-- In this position, heating shall be off and motor operators on dampers shall position so that 100% outside air will be brought in--no recirculation.

2. Winter-- In this position, heating shall be on and under control of thermostats. Motor operators on dampers shall position so that air will recirculate and a minimum of outside air will be brought in. Dampers to be set for outside air as directed.

CONTROL DIAGRAMS: Contractor shall submit complete detailed wiring diagrams of unit heaters, direct gas fired heaters, and boiler burner unit for approval. Diagram shall include Contractors name and phone number.

Mount approved diagrams of each of the above in separate glass front, dust-proof cases. Mount cases near units that they apply to.

OPERATING INSTRUCTIONS: Contractor shall provide Owner with complete operating instructions and shall teach Owner's Operations Man how to operate all equipment.

PIPING: From the point of connection to existing piping, the steam supply mains shall be run as indicated on the Drawings with valves as indicated on the Plans and/or hereinafter specified.

Type piping and fittings shall be as hereinafter specified and/or as shown on the Plans.

Drips from ends of steam mains must be installed in accord with details.

Dry return mains shall be run as indicated on plans, details and diagrams.

Furred pipe spaces for concealed risers and returns in all areas will be provided by the General Contractor. The Heating Contractor must do all necessary cutting and patching at walls, floors and partitions required for the proper installation of all piping.

Special attention is called to notes on the drawings referrint to run-out piping from risers to the convectors, due to the toupet structural system of the building construction.

The supply and dry return mains must grade at least 1" in every 20 feet in the direction indicated by arrows. Lateral runs from mains to risers must be graded back to mains at least 1" in every 1'-0", with a minimum fall of 1" in all cases. All connections must be taken from top of supply and return mains on 45 degrees. The sizes given are the minimum which will be allowed.

TYPE PIPING AND FITTINGS: All supply and return piping above floor slab for the heating system shall be black steel ASTM specification A120-44 using black cast iron beaded or banded fittings. Piping shall be standard weight and tested by the manufacturer before shipment. All return piping under the floor slab must be black standard weight genuine wrought iron with welded joints. Fittings shall be 125 pounds steam working pressure rating and shall be thoroughly tested before shipment. Reducing fittings in supply pipes shall be of the eccentric type to provide a flat run on bottom of the pipe. Reducing fittings in return pipe may be concentric. Pipe fittings may be screwed or for piping one and one-half inch (1-1/2") or larger the Contractor has the option of using welding fittings as described under JOINTS.

No malleable iron fittings in the steam piping system will be allowed.

UNIONS: Unions shall be provided in the erection of all piping to facilitate removal without breaking fittings. For pipe one and one-half inches (1-1/2") and smaller use malleable iron unions with brass inserts and screw nuts. On pipe two inches (2") and larger unions shall be flanged unions using companion flanges and gasket. Companion flanges composing flanged unions shall have standard drilling. Unions shall be used at all equipment connections and on both sides of trap and strainer, at drip points, etc.

If welded joints are used, unions shall be flanged using companion flanges with welding neck and suitable gaskets. Unions to be same rating as fittings.

No unions will be permitted in piping concealed in furring.

VALVES: Valves for the heating system shall be of the type indicated or specified hereinafter.

Valves shall have a rating of not less than 125 pounds steam working pressure and shall be of all brass construction for sizes two and one-half inches (2-1/2") and smaller and iron body bronze mounted for size three inches (3") and larger. All valves shall be provided with suitable wheel handles and stuffing boxes and so designed that they can be repacked while open and under pressure. All valves shall be of one manufacture. Where indicated and in all by-passes around equipment, globe valves of the O. S. & Y. pattern shall be used and these shall be No. 956 or No. 613 as required by pipe size. Other valves whether gate or globe shall be of the non-rising stem pattern. Check valves on piping two and one-half inches (2-1/2") and smaller shall be all brass construction and on piping three inches (3") and larger shall be iron body bronze mounted. All check valves shall be designed for the service intended and discs and seats shall be suitable for regrinding. Check valves to have removable check and access thru port for regrinding with screw driver. Valves to be Jenkins Brothers, or approved equal.

Convector and radiator supply valves shall be of one manufacture and shall be brass packless valves with union connections and composition handles. Valves shall be in accordance with schedule on plans, of a pattern as required by the particular installation and shall be Trane No. 44.

TRAPS: Convector and radiator traps shall be all brass construction for a working pressure of not less than 15 pounds per square inch steam. Traps shall be of a pattern as required by the particular installation and shall be Trane or Velan Thermostatic Traps of size shown on plans.

All drip traps on the heating system installed at drip points, unit heater locations and equipment locations shall be Velan types with cast iron body with strainer. Traps shall be installed as indicated on the Drawings with valves, unions, etc.

All traps, except convector or radiator traps, shall be proceeded by a pipe line strainer. All piping to traps shall be installed with screwed connections, and where located at equipment, traps shall be provided with unions on either side.

Attention is directed to the diagrams on the drawings for further details and specifications for the drip point installations and piping connections.

STRAINERS: Strainers shall be pipe line type, "Y" pattern with blow-off connection. Strainers two and one-half inches (2-1/2") and smaller shall be of the screw pattern, all bronze construction, with brass screen. Strainers three inches (3") and larger shall be of semi-steel body with brass screen. These strainers shall be Kieley and Mueller No. 340, or approved equal, and shall have a steam working pressure of 125 pounds. On Velan traps strainers are built-in.

JOINTS: Joints used in the assembly of heating piping may be screw joints or, for piping larger than two inches (2") the Contractor has the option of using flanged connections with companion flanges and gaskets. Pipe threads shall be national standard and cut with clean sharp dies to make a perfect thread that will pull up tight. Companion flanges shall be national standard drilling and shall be cast iron flanges having a rating equal to that specified for pipe fittings.

If welded joints are used on piping one and one-half inches (1-1/2") and larger, welding must be done by a licensed welder approved by the Architect, using approved methods, rods, fluxes, etc., to prove sound, substantial welds. Welding fittings must be used in lieu of the hereinbefore specified screwed or flanged fittings and shall be steel Tube-Turns with fitting ends properly beveled to receive the welding bead. Welding outlets or threaded outlets may be used provided branch outlet is at least two (2) sizes smaller than main run. Pipe welded into open holes for branch connections will not be acceptable. Welds between straight lengths of pipe shall be reinforced by welding rings that will properly center and space the pipe to receive a substantial weld. The ends of the pipe to receive the weld shall be properly beveled and reamed before the pipe is welded. Either electric or oxy-acetylene type welding equipment may be used provided a substantial weld results.

Union connections shall be provided at suitable locations for dismantling piping regardless of type of joints used.

GENERAL FOR PIPE INSTALLATION: Horizontal supply and return mains shall grade downward in direction of condensate a minimum of one inch (1") in twenty feet (20'-0").

Horizontal "up-feed" supply and return radiator branches shall be taken out of top of mains at 45° angle. Radiator branches shall grade toward mains or risers one inch (1") per foot, except as noted on the Plans.

Provide unions in pipe assembly for removal of pipe without breakage of fittings.

Eccentric reducing couplings shall be used in reducing supply main pipe sized to provide a smooth flow at bottom of pipe.

Ream all pipe after cutting and threading and remove all dirt, chips and scale from each piece of pipe before assembly.

Avoid sags and traps in all supply and return mains and branches. All low points in supply pipe shall be dripped using traps and strainers as hereinafter specified.

Allowance must be made for expansion and contraction in all mains, branches, risers and run-outs.

Unless otherwise noted on drawings, horizontal radiator supply branches shall be not less than one size larger than radiator valves and horizontal radiator return branches shall be not less than three quarter inch (3/4").

HANGERS AND SUPPORTS: All piping shall be properly supported and ancbored as required and as hereinafter specified. All spacing of pipe hangers shall be in strict accordance with the requirements herein specified, and the Contractor shall use extreme care in the selection of the type of equipment used for the supporting of pipe hangers, the size of the hanger rods, the hangers, etc., so that all are coordinated so that the pipe will be safely supported without undue strain on the hangers or their equipment.

All risers shall be properly supported at the bases and at floor intervals, and allowance shall be made for contraction and expansion of the pipe.

Inserts of proper size shall be used where pipe hangers, etc., are hung from concrete construction. These inserts shall be of proper size to support the hanger rod required, and these inserts shall be placed in the forms before the concrete is poured. These inserts shall be properly aligned so that a neat installation will result. Where hanger rods are supported from toupet construction, beam clamps or other suitable supports for the hanger rods shall be used. These supports shall be of ample size to adequately clamp on to the structural member and provide the support required for the hanger rod. Where piping is supported close to walls or supported from walls, suitable brackets shall be used, and these brackets shall be securely anchored to the wall, from which the hanger rods shall suspend to support the pipe hanger.

The pipe hangers used in conjunction with the heating piping shall be as follows, and at spaced intervals not to exceed ten feet (10'-0"), and at each change in horizontal direction.

Pipe hangers for return lines shall be Grinnell's No. 104, or approved equal, split ring, off-center hinge pattern, with adjustable clevis.

All supply piping shall be supported upon Grinnell's No. 174 adjustable swivel pipe roller type hanger. The pipe hangers for supply lines shall be of sufficient size to receive the pipe together with its covering. Grinnell's Figure No. 186 pipe covering protection saddle shall be used on all piping at points where hangers occur. These protection saddles shall be the Type A or Type B, as required, and shall be at leasttwelve (12") long and located in such a manner that pipe expansion will not take the saddle beyond the hanger support. Piping 1½" and smaller may be hung with Grinnell No. 104 hangers.

FLOOR AND CEILING PLATES, THIMBLES, ETC.: At all points where pipes pass through finished rooms, floor, wall and ceiling plates shall be provided, and these plates shall be of a type that will remain permanently in position. Plates installed at floor lines shall be triple chromium plated plates, and those installed on pipes passing through walls or ceilings shall be finished in prime coat finish for painting to match the surrounding surfaces.

This Contractor shall furnish, set and anchor all sleeves, thimbles, etc., required to allow passage of his pipe through floors, walls and ceilings. All thimbles and sleeves shall be of sufficient size to allow for contraction and expansion of the pipe, and where these sleeves are installed in exterior walls at portions below grade, these sleeves shall be caulked water-tight after insertion of the pipe to avoid entrance of water at this point. All sleeves shall be constructed of standard weight genuine wrought iron pipe inserted in the forms before the concrete is poured, and after insertion they shall be filled with sand a completely sealed to avoid entrance of concrete during pouring. The thimbles required for the passage of pipes shall be constructed the same as specified above for sleeves.

RADIATION: Convector elements shall be of copper construction with capacities and enclosure heights as called for on the drawings. All convectors shall be Trane Company's, Modine, or American Radiator Corporation, sloping top type S. W., unless otherwise noted on the Plans. The enclosures for the convectors shall be constructed of not lighter than 16 gauge metal.

Ceiling type radiators shall be American Standard Peerless wall type radiator mounted with suitable ceiling hangers.

WALL RADIATION: Shall be Trane of size and type shown on Plans. Cabinets to be 16 gauge fronts with 20 gauge back. Provide adequate internal bracing, end pieces, brackets, etc., as needed to make a complete job in every respect. Fasten to wall on both top and bottom.

INSTALLATION OF UNIT HEATERS: Unit heaters shall be suspended from overhead by means of two steel rods to each unit. Rods shall be threaded and screwed into unit heater casing and the tops shall be secured in place with washers and nuts.

Attention is directed to the Plans and Diagrams for further unit heater specifications and piping connections.

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UNIT HEATER CONTROLS: Furnish and install as directed, with each unit heater, one room thermostat with mercury thermometer range 40° to 80° F., also one surface aquastat set at 190° F, and one selector switch with thermal overload protective device. Minneapolis-Honeywell controls shall be used and the type numbers are given as follows: Aquastat LA209A, Thermostat T42H and Selector Switch.

STEAM UNIT HEATERS shall be size and type shown on Plans. Motors shall be totally enclosed, and have built-in overload protection. Heaters shall be equal to Westinghouse.

ORIFICES: Proper orifices shall be furnished and installed in supply connection to all radiation elements.

INSULATION: This heating work shall include the insulation of the heating piping as hereinafter specified. All insulation shall be first quality in every respect and shall be installed only by an experienced insulation mechanic, with the installation under the supervision of a qualified foreman. The insulation of pipe fittings, etc., shall be performed only after the system has been placed in operation and the pipe covering allowed to shrink to its maximum extent. After the system has been in operation for a sufficient length of time to allow cover to shrink its maximum amount, the sections of pipe covering shall be abutted closely together, and the space between the end of the pipe and fitting shall be filled with insulation cement.

INSULATION OF STEAM AND RETURN PIPING: All steam or return pipe not under a floor slab or underground shall be insulated with 1" of fiberglass insulation securely banded on. Bands shall be placed around insulation every 12". Fittings shall be covered with insulating cement built up to same depth as pipe insulations. This includes risers and runouts.

Insulate all steam or return piping under a floor slab or underground with 1" P. C. Foamglass. Inside of insulation next to pipe shall be coated with Insulmastic No. 4010, and insulation shall be wired to pipe with stainless steel wire. Outside of insulation shall then be coated with Insulmastic No. 4010, and wrapped with glass fabric. Outside surface of glass fabric shall be given a 1/16" coat of Insulmastic No. 4010.

A flexible fiber glass ring 1" thick shall be provided inside of waterproof wrapping every 30' and/or between each 2 elbows. Ring shall be installed compressed approximately 2/3 of its maximum compressibility.

Insulation shall be installed by a mechanic experienced in this type of insulation work.

INSULATION OF DUCT WORK: All Supply Duct shall be insulated with 1" fiber glass securely fastened on. Attention is called to supply duct occuring in return air plenum of Auditorium Wing.

No insulation is required on return air ducts.

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DUCTWORK, METAL: All ductwork shall be made up of galvanized steel or aluminum sheets, unless otherwise noted, in strict accordance with preferred methods as set forth in the current edition of the ASHVE Guide. These recommendations shall be followed throughout, including minimum metal gauges for duct.

All duct connections to every piece of mechanized equipment shall be made through fire-resistant flexible connections.

Duct shall be kept free of dirt and trash at all times.

All duct turns shall be made at a radius to the duct center line of 1½" times the duct diameter whenever possible.

All ductwork shall be rigidly supported to the building construction and shall be braced as required to maintain the desired shape withour sagging. Round duct shall be made round.

All increases or decreases in duct size shall be made at an angle of 15 degrees to the duct center line, unless noted otherwise.

This Contractor shall submit shop drawings on all ductwork to Architect for approval before installation of duct.

FLEXIBLE DUCT CONNECTIONS: All flexible connections shown or indicated on Drawings shall be equal to Johns-Manville asbestos impregnated cloth sleeves. All sleeves shall be fireproof.

The flexible connections shall be secured to the duct or equipment with 1" wide by 1/8" thick galvanized iron straps. Straps shall be fastened together with 1/4" stove bolts of length required.

TURNING VANES: Turning Vanes shall be commercially made by Barber-Colman of the size and type as indicated on Plans.

Vanes shall not be formed by Contractor or Mechanic.

SONOAIR DUCT: Shall be used on returns in floor slab of ground floor Auditorium Wing. Copper boots with wall grilles shall be used. See Plans for installation details.

DIFFUSERS, GRILLES, LOUVERS, ETC.: Supply diffusers and grilles, fresh air louvers, door grilles, etc., of size and type shown on Plans shall be furnished and installed as shown on Plans. All items to be Barber-Colman.

DAMPERS: Key operated dampers of size required shall be installed for each supply air take-off and in return air at points required for proper operation.

MOTOR OPERATED DAMPERS shall be installed at points shown on Plans, and shall be linked so that a two-position motor operator will change positions, as determined by off-Summer-Winter switch, and bring in either 100% outside air or a fixed minimum

CONTROLS, DIRECT FIRED GAS HEATERS shall consist of High-Low dual manifold with two (2) position control and off-Summer-Winter switch located as shown on Plans for each unit. Also each unit shall have a 100% shut-off, a firestat and a fused disconnect switch. Controls shall be Barber-Colman, or equal. Submit control diagram for approval.

GAS FIRED HEATERS FOR AUDITORIUM shall be equal to Hayes of size and type shown on Plans. Heaters shall be complete with fully automatic controls, and two stage manifolds as outlined elsewhere in Specifications and on Plans and shall be wired up to operate as outlined in Summer, Winter Control sequence cycle.

Heaters shall be located in equipment rooms to best advantage, and shall be mounted and installed in such a way that no sound of operation will be heard in occupied area. Heaters must have 100% shut-off feature on controls.

MOTORS AND ELECTRICAL EQUIPMENT INCLUDED WITH THE HEATING EQUIPMENT:

All motors and electrical equipment shall conform to the characteristics available at the site, and all motors one horse power (1 H. P.) and larger shall be three (3) phase motors. 3/4 H. P. motors shall be 208 V, single phase. Those shaller than one horse power (1 H. P.) shall be single phase motors. The Heating Contractor shall cooperate with the Electrical Contractor in the selection of the electrical control devices that are to be furnished by this Contractor and installed by the Electrical Contractor. All motors shall be provided with low voltage and overload protection devices, and all electrical equipment shall bear the Underwriter's Seal of Approval.

PAINTING AND FINISHING: All convector cabinets and exposed heating work in all locations shall be furnished in prime coat finish ready for painting by the Painting Contractor to the color selected by the Owner. After completion of all work this Contractor shall clean all uncovered piping, etc., and other exposed metal parts of the heating equipment.

TESTS AND CLEANING OF THE SYSTEM (BOTH OLD AND NEW): Upon completion of the work, the systems shall be thoroughly tested, applying 25 pounds test. No covering shall be applied until this test is completed. After the system has been made tight at the pressure stipulated, cleaning shall be done in the following manner.

Clean the boilers by removing the safety valves and placing a quantity of approved cleaning compound in the boilers. Replace the safety valves, close all main valves, and start a sufficient fire to raise the steam. Blow off boiler at surface until boiler

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holds a steady water line, after which open main valves and by-pass condensate return units until it is clean, after which drain the system and boiler and wash the boiler thoroughly with clean water. This process must be repeated if the water lines fluctuate abnormally or show signs of foaming. The Architect is to be notified in writing two days before this cleaning and test is to be made.

The steam work shall include the testing of all piping and apparatus and in the system for leaks, faulty joints, improper operation, etc., in both old and new work.

After installation of the boilers and their equipment, fill the entire system with water and develop a hydrostatic test pressure up to the maximum that the system will stand and check for leaks.

Any defective joints in either old or new work shall be immediately replaced and the test repeated until found to be tight. All tests shall be performed in the presence of the Architect or his representative.

Existing Traps and Valves in all parts of old system shall be cleaned, inspected and repaired as necessary as a part of this Contract.

BALANCING AND ADJUSTING: When all work is completed, the Contractor shall clean all strainers and traps, lubricate and clean all apparatus, pack and make tight all stuffing boxes, and adjust all automatic apparatus, including motor operated steam valves in Boiler Room.

He shall deliver to the Architect all instruction cards and bulletins as supplied with apparatus.

After the installation of all equipment has been made, this Contractor shall properly adjust and balance all equipment, valves, etc., to provide for proper heating of the building and enclosed spaces. At this time he shall instruct the Owner, or his Operating Engineer, as to the proper operation and maintenance of all equipment and the operation of the systems, and shall deliver at that time all instruction cards, pamphlets, parts lists, etc., furnished with the equipment, delivering these to the Owner for the Owner's files.

After completion of the heating work the system shall be given two eight hour (8 hr.) tests, to prove that the system is in perfect operating condition, as well as all of its incidental parts, controls, equipment, etc. This test shall be performed in the presence of the Architect and/or the Owners, and shall not be conducted until the Architect or his representative is present. This test shall include a summertime test, during which the system shall be operated and proved to maintain the performance requirements hereinbefore specified and a wintertime test whereby a test shall be made to indicate that the system operates according to the winter time conditions, as hereinbefore specified. It is required of this Contractor to make all necessary adjustments, balancing, etc., to provide satisfactory operating system throughout and acceptance of the system will not be made until the Owner is satisfied as to the operating conditions of the system.

CLEANING UP: This Contractor, after the completion of his work, shall remove all surplus material, broken and damaged fittings, waste pipe, etc., brought to the premises for use in his work. He shall also remove all debris caused by his work and shall leave the premises thoroughly clean to the satisfaction of the Architect.

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ELECTRICAL WORK

CODES, PERMITS AND INSPECTIONS: The installation shall comply with all Local Laws applying to electrical installations, with the latest regulations of the National Electrical Code where such regulations do not conflict with the Local Laws in effect, and with the regulations of the Public Utility furnishing the electric service.

This Contractor shall obtain all permits required by the Local Laws or Ordinances.

After completion of the work, this Contractor shall furnish the Architect in duplicate a Certificate of Final Inspection and approval from the Underwriters' Inspection Bureau having jurisdiction.

STANDARDS FOR MATERIALS AND WORKMANSHIP: All materials shall be new and shall conform with the Standards of Underwriters' Laboratories, Inc., in every case where a standard has been established for the particular type of material in question. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance when completed.

DRAWINGS: These Specifications are accompanied by the Electrical Drawings of the building showing the location of all outlets, the switch control, the layout of the branch circuits, the electric fixture schedule, and the telephone and signal layouts.

DEVIATIONS: No deviations from the Plans and Specifications shall be made without the full knowledge and consent of the Architect.

Should the Contractor find, at any time during the progress of the work, that in his judgement, existing conditions make desirable a modification in the requirements covering any particular item or items, he shall report such items promptly to the Architect for his decision and instructions.

OMISSIONS: The Drawings and the Specifications are complementary to each other and are considered a part of the Contract. Any work or material shown in one and omitted in the other, or which may fairly be implied by both or either, shall be furnished or performed as though shown in both, in order to give a complete and first class job.

PROGRESS OF WORK: This Contractor shall order the progress of his work so as to conform to the progress of the work of other trades and shall complete the entire installation as soon as the condition of the building will permit.

GUARANTEE: This Contractor shall leave the entire electrical system installed under this contract in proper working order and shall, without additional charge, replace any work or material which developes defects due to defective material and/or workmanship, except from ordinary wear and tear, within one year from date of the acceptance of the building by the Owner.

SCOPE OF THESE SPECIFICATIONS: The work to be done under these Specifications shall include the furnishing of all labor and material required to complete and leave ready for operation the installation of the following items, in accordance with these Specifications and the accompanying drawings:

A. Furnishing and installing additional feeder breakers, feeders, conduits and distribution panels, the substitution of a main service breaker of the proper size to replace the present Main Service Breaker as called for on the Drawings for the Addition. The new panels shall be of the same type and manufacture as in the existing building.

B. The wiring for Power and Lighting, including the wiring for the Shop Equipment, including shop feeders, and Stage Wiring for the Main Auditorium Stage (Area 132) and the Choral Room Stage (Area G56).

C. The wiring for the Heating, Plumbing and Ventilation Contractors including non-fused disconnect switches. The wiring of motors and controls for the proper operation of same will be the responsibility of the three (3) above Contractors.

D. The furnishing and installing of the additional equipment for the Program Clock, Fire Alarm and Public Address Systems to match existing systems.

E. The furnishing and installing of telephone conduits and telephone outlets for Addition.

F. The furnishing of all Lamps.

TYPE OF SERVICE: The Service will be 120/208 volt, three phase, four wire, 60 cycles, furnished from the existing secondary bus of the Georgia Power Company's Substation, located in the Basement of the present High School.

CONDUITS: All steel conduit shall be of the best quality steel tubing of standard pipe dimensions, smooth inside and out. Thick-wall rigid conduit shall be galvanized with threaded couplings, locknuts and bushings. Electric metallic tubing shall be galvanized with water tight couplings and connectors with hexagonal heads.

Electric metallic tubing shall be used up to and including 2" diameter and except where wire size requires thick wall rigid conduit. The word "Conduit" used below means either thick wall or rigid conduit or electric metallic tubing.

Flexible conduit shall be single strip.

Rigid Conduit	Electric Metallic Tubing
General Electric National Triangle, similar or approved equal.	Steel Tube, National, G. E. similar or approved equal.

Flexible Conduit: Flex steel, National, G. E., or approved equal.

All conduits shall be concealed in building construction except as noted.

No conduit lines shall be trapped, except those so shown or specified.

Not more than two circuits may be run in one conduit unless specified. This section does not apply to signal nor control circuits, as to the number of control or signal conductors that may run in a single conduit.

All conduits, left empty for future use and for telephone circuits, shall be left with a No. 16 gauge iron wire pulled in them and the ends securely corked and capped.

Conduits shall be grounded as provided by the National Electric Code.

Connections to panels, cabinets, pull boxes etc., shall have grounding wedge lugs, Thomas and Betts, or approved equal, between the bushing and the box or the grounding connectors.

All conduit lines shall be securely capped with metal caps, and all outlet boxes plugged and stuffed, to prevent entrance of water and other material during construction.

The Contractor shall provide all necessary protection to prevent damage to the conduits during construction.

Wherever conduit risers go in tile or concrete walls, they shall be put in place before the walls are built, and the Contractor shall be responsible for the accurate setting of all conduits as served.

Where walls are built of tile or concrete blocks and are not plastered, these blocks shall be threaded on the conduit and the outside face of these blocks shall not be cut.

Conduits shall not be run through heating ducts except as herein specified.

All outlets and fittings on exposed conduits shall be condulet fittings.

Where conduits are shown run in the floor, they shall be run in concrete.

All conduits in spray painting and paint storage rooms shall be of the rigid type and shall be sealed off from the rest of the conduit system with approved sealing condulets, Crouse-Hinds type EYS or approved equal; vaporproof fixtures and fittings shall be used inside of the cold storage room. All switches shall be located outside, with bull's eye lenses. Vapor-proof fixtures and fittings shall be used in the Painting and Paint Storage Rooms.

Rigid conduit connections to panels, cabinets, troughs, outlet boxes, etc., shall be fastened to the walls of the above with locknuts on each side of the wall, before the bushing is installed.

All fire alarm circuits shall be run in rigid conduit.

All underground circuits shall be run in rigid steel conduit, inside of the building's foundation walls. The conduits shall be stubbed out atleast 4'-0" beyond the foundations when lines are run beyond the building's walls.

Conduits in the Boiler Room, Electric Distribution Room, Pipe Tunnels, Etc., shall be run in the open. Conduits carrying feeders can be run open in the Shop Areas to ceiling pull boxes for raising concealed to panels in the upper floors on the left wing of the building. Conduits carrying feeders to panels on the upper floors in the front of the building can be run on the ceiling close to the inside wall of the Cafeteria and the adjoining corridors, then to ceiling pull boxes, and then rise concealed to the various panels. All other conduits shall be run concealed.

WIRING: All main service conductors and all feeders to light and power panels shall be in rigid conduit. All branch circuit wiring shall be in electric metallic tubing or rigid conduit.

Conductors shall be of copper of 98% conductivity sizes specified are B & S gauge up to 4/0 and circular mills above that.

Conductors No. 6 and larger shall have double braid. Those smaller than No. 6 shall have single braid over the insulation.

All conductors, except in trapped conduits, conduits run in the slab on ground and in conduits run underground, shall be insulated with code grade rubber insulation. All conductors shall have a "SAFE-COTE" braid covering over the rubber and shall be color coded and marked with the type of wire, size and make. All conductors run underground, in trapped conduits or conduits run in the slab on ground shall have Type "RH" or Neoprene type of covering over the insulation.

All conductors installed in the Boiler Room shall have Type "RH" insulation.

Wiring in fixtures shall be asbestos protected and flexible stranded.

All neutral conductors shall have a white or gray braid and all other conductors shall have black or colored braid over the insulation.

Every coil of wire shall be in the original wrapping and shall bear the Underwriter's label of approval.

All inside wiring shall be General Electric, Hazard, Habirshaw, General Cable Company, Etc., or approved equal.

Where conductors are left for connection to any fixture or apparatus sufficient spare conductor or cable shall be provided at the ends for convenient connection.

Fixture connections at the outlet box shall be made with insulated wire connectors, "Wire Mold" or approved equal. All wire shall be twisted tightly together before using connectors.

All conductors installed as control wires for the control of Contractors, shall be No. 14 R. C.

Conductors for the operation of buzzers, chimes, annunciators, fire alarm, intercommunication, loud speaker and clock systems shall be of the size and type, as specified by the Manufacturers of the various systems used.

PULL BOXES: Pull Boxes shall be installed in conduit lines wherever necessary to avoid long runs or too many bends.

Pull boxes shall be of galvanized sheet steel, of code thickness, and code dimensions; with screw covers.

Pull boxes shall be securely fastened or supported to the ceiling or wall.

Pull boxes shall be installed so that the cover is accessible at all times.

No pull box shall be installed for the joint use of 110 volt, signal or low voltage wiring.

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FEEDER BREAKERS: The Contractor shall furnish and install in the Main Switch Board located in the Distribution Room, the breakers required for the new feeders required for the New Addition, all as shown on the Revised "Riser Diagram", shown on the Drawings.

All new breakers shall be of the ampere capacity as shown, and shall be equal to Westinghouse No-Fise "De-Ion", Type or approved equal, or equal to the breakers now installed in the existing building.

All breakers rated less than 225 amperes, shall be in the 600 volt class with the 15,000 ampere (RMS) interrupting capacity required.

When additional breakers required exceed the space in the existing switchboard, individual breakers of the specified ampere capacity shall be mounted adjacent to the present switchboard and connected to the existing Main Secondary Bus with the proper leads.

When Westinghouse Type "L" frame breakers, or approved equal, are required, the breakers shall be mounted adjacent to the present switchboard and properly connected to the Main Secondary Bus.

CONDUIT FOR NEW FEEDERS: Conduits for new feeders required for the addition shall be run from the Distribution Room to the Kitchen Area in the Ground Floor and run exposed on the wall or ceiling to the new areas, and then up thru the walls or columns to the required locations of the several panels in the New Addition.

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LIGHTING PANELS: All lighting panels shall be of the dead front circuit breaker type, with standard single door, with 3 phase, 4 wire, 120/208 volt mains, with Type AB breakers in the mains.

The branch circuits shall have Type NLAB breaker in the "hot legs". Circuit breakers shall be of the thermal-type unit construction, employing quick-make and quick-break toggle mechanisms for manual operation as well as automatic operation. Breakers employing slow-make or slow-break operating mechanisms will not be acceptable. Automatic tripping shall be indicated by the breaker handle assuming a clearly distinctive position from the manual "ON" and "OFF".

Lighting panels serving combination 208 volt, single phase loads, 208 volt, 3 phase loads, shall have AB breakers, as called for on the panel schedules and as shown on the Drawings.

The panelboards shall be either for flush or surface mounting as called for on the schedules.

All panel boards shall be mounted in enclosing cabinets consisting of a code gauge, sheet steel box with trim and door. The box shall be manufactured from commercial galvanized sheet steel. The trim shall be manufactured from one piece of full-finish sheet steel (not galvanized) painted with two coats of paint, the first being a prime coat and the second a finish coat of neutral gray lacquer.

Cabinets shall be of sufficient size to allow a gutter space of at least 4" on all sides around the panel board.

Trims shall be fastened to cabinet by means of approved adjustable clamps.

All trims shall have door equipped with chrome-plated combination lock and catch, six keys being supplied with each lock. All locks shall be keyed alike.

All circuits shall be numbered and a circuit directory listing the location of the circuits controlled, shall be carefully lettered in India Ink or typewritten and inserted in the Directory frame.

All panels, except the panels for the Auditorium shall be similar or approved equal to Westinghouse Type NLAB, Quicklag, No-Fuze "De-Ion" Panelboards.

COMBINATION DIMMER PANELBOARDS FOR AUDITORIUM AND CHORAL ROOM: The panelboards serving the Auditorium and Main Stage, Panel "S-SD" and the Choral Room and its attendant Stage Panel "S" shall be of the combination dimmer and panelboard type, all as described in the following specifications and as scheduled on the Drawings.

The Electrical Contractor shall furnish and install where shown on the Drawings, two manually operated stage control dimmer panelboards, arranged for 120-208 volt, 3 phase, 4 wire, 60 cycle, S.N., AC service. The panelboards shall be complete with all necessary connections for the control of stage and auditorium lights and also also constant circuits not dimmed and as called for in the schedules and shall have main breaker in the mains.

The switchboard shall consist of properly braced and supported angle iron frame work arranged for floor mounting. The right end shall contain a magazine compartment with all necessary main and branch circuit wiring and circuit breaker panelboard. The door of magazine compartment shall be provided with a directory frame for circuit identification. The switchboard to be arranged for adequate ventilation.

The top shall be provided with a continuous lighting trough for lighting the front of the board. The dimmer units and their controls shall be located directly below and consist of sectionalized units, approximately 4-1/2" wide and 10-1/2" high.

The dimmers shall be of the Frank Adams, Cutler-Hammer, No. 861-C-1, transformer type, or approved equal. The dimmer units shall be arranged for banking and operation with interlocking levers as hereinafter described.

There shall be one common shaft for each color of each group of dimmers with their respective color master levers and switches located in the center between the stage and house sections. The dimmer control handles shall be of the enclosed interlocking type so that they may be operated individually or collectively. The color masters shall be of the enclosed interlocking type to give grand master control. Interlocking of all dimmer handles and levers to shafts shall be accomplished by a half turning motion of the hand.

Immediately above each dimmer there shall be provided a 50 ampere single pole circuit breaker controlling each dimmer with a colored jewel bulls eye to indicate when circuit is in a closed position. Each control circuit to be provided with a name plate for identifying circuit control.

A house master lever independent of stage controls shall be provided for varying positions of Auditorium dimmers as a group.

All circuits in Magazine and constant circuits on face of switch board shall be Quicklag Type, Class I Type.

All internal wiring and connections shall be made by the switchboard manufacturer and terminate to a suitable termination connection strips.

Capacity of dimmers and circuits shall be as shown in schedule.

MAINS AND FEEDERS - All mains and feeders shall be run concealed in the building construction, except where shown otherwise. Mains and feeders shall be run as shown on the Drawings.

Size of wiring and conduit shall be as shown on Drawings.

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LIGHTING CIRCUITS - Lighting circuits shall be 2 and 3 wire circuits run from the panels to all outlets, as shown on the Drawings.

In general, ceiling outlets and receptacle outlets shall be on separate circuits.

No circuit wiring shall be smaller than No. 12, all circuits 1200 watts and over and length of over fifty (50'-0") one way shall have No. 10 conductors.

LIGHTING OUTLETS - All outlets occurring in panels and other architectural features shall be centered. The location of any outlet may be moved as much as 10'-0" by the Architect before the outlet is placed without incurring any extra cost.

All dimensions refers to the finished floor lines.

Outlet boxes shall be pressed sheet steel and shall be galvanized.

All outlet boxes shall be equipped with 3/8" fixture stud.

Outlet boxes shall be suitable for the service and type of outlet, and shall not be less than 4" in diameter and 1-1/2" deep, except where otherwise specified. Boxes installed in concrete, tile or brick walls not plastered and not covered with insulation board shall be utility boxes or sectional boxes so that the plate will cover the box. All outlet boxes occurring in masonry walls plastered shall be 4" square, not less than 1-1/2" deep and with plaster rings.

Covers where required shall be mounted on switch and receptacle boxes, and plaster rings on ceiling boxes, to approximately flush with the finished surface where insulation board is used, covers shall be of the proper height to come flush with the finished surface.

Outlet boxes installed in furred ceilings shall be supported from the ribs, or beams of the ceiling construction.

Bracket outlets shall be located above the door lintel, if possible when so indicated. Bracket outlets over lavatories shall be 6'-8" from the floor to the center line of outlet box.

Boxes shall be fastened to the solid brick wall by means of expansion screws.

Receptacle and telephone and other types of boxes shall be mounted so that the plates are horizontal with the floor.

The mounting height of bracket outlets in the stair wells shall be determined in the field.

SWITCHES - All switches shall be rated at 20 ampere 125 volts, and T rated, toggle type, Bryant No. 4901, three way Bryant No. 4903, or approved equal.

All switches shall have "T" ratings.

Switches shall be connected in the live side of the circuit only and shall control only the outlets indicated.

Where more than one switch is indicated in the same location, switches shall be mounted under a common gang plate.

Switches shall be mounted 4'-6" above the floor, and shall clear the trim or corner 4" or center the space occupied.

Switches shall be firmly screwed to the boxes without depending on the plates to pull them tight.

Switches controlling remotely controlled fans, etc., shall have ruby red pilot light attached.

RECEPTACLES otherwise not specified shall be Duplex Type, wide side terminals, Bryant No. 4832, Hubbell, G. E., or approved equal, flush mounted, 18" above floor unless noted otherwise.

Heavy duty receptacles shall be approved equal to Bryant No. 556 with cap, Hubbell, G. E., flush mounted, 18" above floor unless noted otherwise. 50 amp. receptacles shall be Bryant No. 3846 or approved equal.

The Contractor shall check Home Economic Class Room Areas 103, 104, 109, and 110 to determine what receptacles are to be mounted above work tables, serving tables, etc.

Floor boxes shall be with Receptacles, and equal to Steel City Electric Company, Catalog 401.

LIGHTING FIXTURES - Lighting fixtures shall be furnished and installed on all ceiling and inside and outside brackets light outlets as shown on the Drawings.

Furnish a complete list of all fixtures together with the photographs and description to the Architect for approval before any fixtures are purchased or installed.

All fixtures and lamps shall be wattages as shown on the Plans. Enclosing globes shall fit the sizes of lamps specified and all RLM reflectors shall fit the sizes of lamps specified.

All ballast used for fluorescent fixtures shall be of the "BRICK" type and must have the E. T. L. (Electrical Testing Laboratories) Label of approval.

All fixtures shall be wired with the neutral wire connected to the outside shell of the socket.

The incandescent lamps shall be for 120 volt operation and shall be General Electric, Westinghouse, or approved equal. All lamps used in the indirect fixtures shall be of the silver bowl type.

All fluorescent lamps shall be approved equal to Sylvania's "WARMTONE". All lamps shall be furnished and installed by the Contractor.

EMERGENCY LIGHTING - All exit stair well lighting and certain corridor fixtures shall be connected to the "Emergency Lighting Panels", as shown on the Riser Diagram and called for under the "Distribution Switchboard" of the Specifications.

PROGRAM CLOCK SYSTEM - ADDITION - The Contractor shall furnish and install a complete Program Clock System in the new Addition, consisting of Distribution Relay, Single and Double Dial Secondary Clocks, Class Room Buzzers, Inside and Outside Signal Bells, to match and tie in with the existing system which was furnished by the IBM Corporation (International Business Machine Corporation), using equipment as described in the Specifications shown below and which shall be furnished and installed in the Addition.

There is presently installed in the existing building an IBM No. 91-4 Master Program Clock, minute impulse, 24 volts. This system is to be extended into the new addition and operate as one complete system. At each end of the existing building where the present bell and clock wires have been terminated, furnish and install IBM No. 604-9 Distribution Relay complete with transformer rectifier and relays for supplying the new source of power to signals and clocks in the new addition.

SINGLE DIAL - SECONDARY CLOCKS - Furnish and install where indicated on the plans IBM No. 75 Indicating Clock, Semi-flush minute impulse, 24 volts D. C., self-regulating, 12" size single dial except as noted on the Plans. Mount on special IBM Outlet Box No. 5957.

DOUBLE DIAL SECONDARY CLOCKS - Furnish and install in corridors, where shown on the Plans, IBM No. 65-52 Double Dial Indicating clock, 15" dial, minute impulse, 24 volts D. C. Mount on standard four by four outlet Box.

CLASS ROOM BUZZERS - Furnish and install in each Class Room, where shown on the Plans, IBM No. 4001 - 1 Buzzer, 24 volts A. C., flush mounted on single gang plate. Use four by four outlet with single gang plaster ring.

SIGNAL BELLS - Furnish and install in Corridors, Shops, Band Room and other locations where shown, IBM No. 4016-6 Bell, 6", under-dome solenoid operated, 24 volts A. C. Mount on standard four by four outlet box.

Furnish and install on the outside of the building where shown IBM No. 4018-0 Bell, 10", weatherproof, with cast aluminum grid, 24 volts A. C.

WIRING - Provide 115 volts, 60 cycles direct from a panel to each distribution relay. From the distribution relay, run three (3) No. 14 wires as a parallel circuit to all indicating clocks. From the distribution panel, run signal wires as noted on the Plans.

FIRE ALARM SYSTEM - The Contractor shall furnish and install a complete Fire Alarm System in the new Addition, consisting of new Fire Alarm Transformer, Fire Alarm Break Glass Stations, Double and single Projector Horns to match and tie-in with the existing system which was furnished by the IBM Corporation, using equipment as described in the specifications shown below and which shall be furnished and installed in the new Addition.

There is presently installed a 24 volt A. C. Fire Alarm System, open circuit, non code. This system is to be extended into the new addition and operate as a complete system. At the location of the existing Fire Alarm Transformer, furnish and install IBM No. 824-4 Transformer 115/24 V A. C. 500 V amperes mounted in IBM No. 8501 surface mounted cabinet. Connect this in parallel to be existing transformer.

At the ends of each building, pick up the existing fire alarm circuit and extend it to the new addition.

Furnish and install IBM No. 4250-1 Fire Alarm Break Glass Station mounted on a four by four Outlet Box with 3/4" deep single gang switch cover. Where shown in corridors, furnish IBM No. 4016-8 Bell, 24 volts A. C. mounted on a four by four box. In other locations, furnish and install the same bells shown above.

The Fire Alarm and Program Control equipment will be installed under the supervision of an IBM Engineer.

GUARANTEE - Manufacturer to furnish necessary wiring diagrams and to guarantee this equipment from electrical or mechanical defects for a period of one year from date of installation.

TELEPHONE CABINETS AND CONDUITS - Furnish and install a system of telephone conduits, and outlets as shown on the Drawings. The telephone outlets shall be connected to their respective cabinets with 3/4" conduit. No more than three (3) outlets shall be connected to one (1) - 3/4" conduit. A No. 14 fish wire shall be left in all telephone conduits.

All telephone outlets are to be standard boxes, equipped with plaster rings and bushed over hold covers.

PAGING AND INTERCOMMUNICATION SYSTEM - Furnish and install paging and intercommunicating system complete with speakers, microphones, switches, etc., all located as shown on the Drawings and as called for in these Specifications. All equipment shall be as manufactured by the Radio Corp. of American, or approved equal, and shall be installed and connected to the various cables by a competent factory trained technician and representative. This equipment must be thoroughly tested out and turned over to the Owner in a 100% working order. None of this equipment shall be used during the construction of the building.

MASTER CONTROL CABINET - The Master Control shall be RCA No. MI-14902 triple turret console, composed of two (2) 70-Watt amplifiers, with separate communication amplifier, 70 class room switches, 1 AM-FM and short wave radio, one (1) manually operated 33-1/3 and 78 RPM record player, 4 low impedance inputs and all necessary switches and controls, volume indicators, monitor speaker, etc., for the operation of a dual channel station.

CLASS ROOM AND LIBRARY SPEAKERS - Class Room and Library Speakers shall be RCA, MI-12454 with MI-6104 housing, accordian cone speaker assembly.

Volume control shall be installed on Monitor, Superintendent's and Principal's office speakers.

AUDITORIUM SPEAKERS - Speakers in the Auditorium shall be two (2) RCA, LC-4A with transformer mounted flush on each side of the stage, 12'-0" above floor level. The two speakers shall be connected in parallel.

SHOP SPEAKERS - Speakers in the Wood and General Shops shall be two (2) RCA, MI-6317 speakers each. The speakers in each shop shall be connected in parallel.

STAGE, OFFICE AND CHORAL ROOM MICROPHONES - The microphones shall be RCA, MI-6203-C, with RCA, MI-4624A wall receptacles, RCA-MI-4630B Microphone plug with 30'-0" of RCA-MI-42 microphone cable. The microphones for the stage and choral room shall have a RCA, MI-4068E adjustable floor stand. The microphone for the Principal's office shall have a desk stand. The wall receptacle shall be mounted 6" above the floor.

ANTENNA - Furnish and install above the roof as directed one (1) AM-FM antenna assembly, Amphenal 124-001, or approved equal, capable of handling all four standard band waves and connect to the control cabinet. All to be installed in accordance with the Manufacturer's printed directions.

The antenna shall be located on the roof at a spot over the General Office. A One (1") inch rigid steel conduit shall be installed from this location on the roof to a junction box in the General Office. A Type F weatherproof condulet shall be installed on the conduit. The conduit shall be properly flashed at the roof level so as to prevent leaks.

WIRING - Install in steel conduit from control cabinets to each remote Microphone, RCA, MI-42-a conductor, shielded rubber covered cable. Install in steel conduit from control cabinet to each loud speaker, except as noted, RCA, MI-38 twisted pair shielded cable. It is permissable to run both the microphone and loud speaker cables in the same conduit, provided the proper size conduit is used.

Speakers are to be located approximately 20" from top of speaker to ceiling, unless otherwise called for. Outlet boxes are to be provided for each speaker and are to have single gong covers. Twelve (12") inches of excess cable shall be provided for all wall speakers.

All wiring from speakers and microphones shall terminate where shown on Plans at Control panel through a junction box, thirty (30") inches from floor and with six (6'-0") feet of excess cable for each circuit. Each pair of wires shall be plainly tagged tagged as to the location of outlet controlled.

The Contractor shall connect up the loud speakers in the Auditorium, so that the speakers can be used either with the Public Address System or with the sound reproducer of the moving picture projection machine. This connection shall be in accordance with the details below and with the schematic diagram as shown on the Drawings.

The circuit from the loud speakers in the Auditorium shall be connected to a RCA Amphenol 61-FI receptacle mounted on the wall of the Projection Room. The loud speaker circuit from the control cabinet, and the circuit from the sound reproducer, shall be terminated in R. C. A. Amphenol M161-MI plugs in the Projection Room and securely fastened to the wall adjacent to the above receptacle, with enough slack so that either circuit can easily be plugged into the receptacle. Each circuit shall be plainly marked with tags or labels, showing their respective designations.

No splices, unless absolutely necessary shall be made. All cable connections shall be soldered and tapped. The cable color code shall be strictly adhered to.

Install a 1/2" conduit from the control cabinet to the nearest cold water pipe for a cabinet ground. Install a 125 volt receptacle adjacent to control cabinet for 60 cycle power.

Upon completion of wiring installation, the Contractor shall ring out all wiring and shall check for shorts and grounds.

GUARANTEE - This Contractor shall leave the entire Electrical Work as installed under this contract in proper working order and shall, without additional charge to the Owner, replace any work or material which develops defects due to defective material and/or workmanship, within one year from the date of acceptance of this work by the Owner.

STAGE-PROJECTION ROOM RETURN CALL CIRCUIT - The Contractor shall furnish and install an Edwards & Company Return Call System between the Projection Room and the Stage. It shall consist of a push, and a 2-hole push button plate buzzer, Edwards & Company No. 139, located as shown on the Drawings on the Stage and in the Projection Room. Install the push and buzzer on the Stage, along with an Edwards and Company No. 872 transformer. Furnish and install 1/2" conduit with 3-No. 14 conductors between the above two stations.

BORDERLIGHTS: The Contractor shall furnish and install Borderlights on the Main Stage, all as shown and called for on the Drawings. The borderlights shall be approved equal to Major Type No. B-156 for the Main Stage. The borderlights shall be furnished complete with housing chains, moulded medium base, sockets, properly wired alternate for red, white and blue circuits with terminal connection blocks, all reflectors to be Alzak one glass rounded for each reflector. Each reflector shall be equipped with slip retaining ring. Heavy wire guards shall be provided to prevent scenery fouling.

The Contractor shall furnish and install the necessary runs of $1\frac{1}{4}$" standard black pipe, for the supporting of the borderlights. The pipe shall be supported on chains, securely fastened to and suspended from the stage ceiling with suitable winch for each borderlight, winch to be approved equal to Channon No. 110-A loft and lead block equal to Channon No. 85, single, double and triple blocks as required.

FOOTLIGHTS: The Contractor shall furnish and install foot lights on the Main Stage, all as shown and called for on the Drawings. The footlights shall be approved equal to Major's Type Mo. D-156 for the Main Stage. The complete section shall include all wiring; splice boxes for conduit and conduit wiring; wood trim, wood swinging covers, mercury automatic disconnect switches for each circuit; Alzak processed reflector unit with natural colored convex shaped heat resisting roundels, red, white and blue, alternately on three circuits. Each roundel shall be held in place with a slip retaining ring.

STAGE FLOOR POCKETS: Furnish and install on the Stage, where shown on the Drawings, 2 Major Catalog No. FF53, 3 gang floor pockets rated at 50 ampere capacity, or approved equal. The floor pockets shall be connected to Panel "S", as called for in the Panel Schedule.

LABORATORY EQUIPMENT: The Contractor shall make all connections to the laboratory equipment, which will be installed under another contract. Included in the above is the connection to the motor in the fume hood.

AISLE LIGHTING: The Contractor shall install the necessary wiring and make connection to the aisle lighting fixtures. The aisle lighting fixtures will be furnished and installed by the Seating Contractor. This Contractor shall furnish and install certain louvered recessed wall lights in the Main Auditorium, as shown on the drawings.

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"P" - Guth Catalog No. 1851, pull chain, ceiling mounting, or approved equal.

"R" - Guth Catalog No. A1651 Exit Fixture, flush type, with 6" White Letters on Green Glass and Sockets for 2 - 25 Watt Lamps.

"S" - Guth Catalog No. A1655, Exit Fixture, ceiling mounting with 6" white letters on green glass and 2 sockets for 25 watt lamps.

"T" - Guth Catalog No. A1659, Exit Fixture, Triangular, wall mounting with 6" white letters on Green Glass and 2 sockets for 25 Watt Lamps.

"U" - Guth Catalog No. A1877, Bracket, 23" x $8\frac{3}{8}$" x $10\frac{1}{2}$", Bronze Finish.

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SCIENCE EQUIPMENT

In Physics and Chemistry Laboratories install existing equipment as shown cross-hatched on Drawings, and new Sink, Kewanee No. 7889.

In Science Class Room install Instructor's Table, Kewanee No. 8356. (3 Req'd) see add 1-3

In Exterior Wall opposite Preparation Room, install Cabinet Sink, Kewanee No. 8379, without splash back.

In Biology Class Room install Kewanee Equipment as shown on Drawings.

In Dark Room install Cabinet Sink, Kewanee 8379.

See add #1 [illegible] fittings etc
See add #[illegible] additional equip.
D.F.

X - [illegible] [illegible] by Bd.

METAL LOCKERS

SCOPE: Furnish and install in place, ready for use, Metal Lockers, in locations indicated on the Drawings. Lockers to be as manufactured by the Lyon Metal Products, Inc., or approved equal.

GENERAL: Lockers to be 12" wide by 12" deep by 60" high, flat top, single tier. Each locker to be equipped with flat key built-in master keyed lock. Furnish two keys for each locker and three master keys.
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DOOR FRAME: Vertical and horizontal members to be rolled steel angles not less than 1 x 1 x 1/8" with welded joints or formed steel shapes having equivalent structural strength and rigidity.

DOORS: Doors to be formed from not less than 16 U. S. gauge prime cold rolled steel; pickled, stretcher leveled, and free from buckle, loose scale or other surface imperfections. Surface to be treated to assure a suitable base for application of enamel.

OTHER SHEET METAL PARTS: Sides, backs, tops, bottoms, and shelves to be formed from prime hot rolled sheet steel; stretcher leveled or equivalent and free from buckle, loose scale or other surface imperfections. Surface to be treated to assure a suitable base for application of enamel.

FINISH: All steel parts to be thoroughly cleaned before finishing and to be finished with a heavy coat of baking enamel, baked at not less than 300 degrees. Enamel must stand rigid hammer test without flaking.

HINGES: Hinges to be of a type that will make proper provision against loosening of pin when locker door is subjected to extra strain or abuse. It shall be impossible to remove hinge or drive out hinge pin from outside of door when door is closed and locked. Locker doors to have 3 hinges.

LOCKING ARRANGEMENT: All lockers are to be locked by a device engaging with the door jambs opposite the hinges; locker doors to be locked at 3 points. Locking device is to be arranged so door can be locked with padlock, as specified above, and shall have recessed handle.

PRE-LOCKING DEVICE: A pre-locking device is to be an integral part of the locking device itself. It is to be arranged so the door may be locked while open, and the closing of the door will automatically lock the locker.

NUMBER PLATES: A number plate is to be furnished for each locker. Number plates are to be shipped loose. Numbers on number plates and their distribution on the lockers are to be as directed by the Architect.

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EQUIPMENT: Lockers to have three single prong and 1 double prong coat hooks. All hooks to have ball points, to be free from sharp corners or edges, to be galvanized or otherwise rust-proofed and to be fastened to locker with 2 bolts. Lockers to be equipped with a shelf to be placed 9" from top.

ANCHORING: All lockers shall be properly anchored to the floor and/or wall with expansion bolts, drive-ins or similar device and shall be so done as to make the installation a neat, rigid, and workmanlike job.

STAGE EQUIPMENT AND WINDOW DRAPERIES

MAIN AUDITORIUM

MATERIALS: **Stage:** Teaser Border, Front Curtain, Tormentor Legs and Grand Drapery Border to be made of Saluda Velour, as manufactured by Piedmont Plush Mills, Greenville, S. C., or approved equal. Concert Curtain to be made of Ripple Repp, Envoy Damask, or Moderne Damask, as furnished by Frankel Associates, New York City, or an approved equal. All of the above to be lined with Barathea Cloth as furnished by Melco Fabrics Company, New York City, or an approved equal. Screen Curtain, Rear Curtain, Cyclorama Curtains, and Borders to be made of No. 214 Spun Boucle, as furnished by Frankel Associates, New York City, or an approved equal.

Windows: Window Valances and Draperies to be made of Saluda Velour and lined with Barathea Cloth same as above.

All of above materials to be mill-flameproofed and colors to be selected by the Architect.

FABRICATION: All curtains shall contain at least 50% added fullness. Top edges to be box-pleated and reinforced with No. 85 heavy 3½" jute webbing, No. 2 grommets at each pleat on 12" centers, with tielines or No. 9 "S" hooks as required for hanging. Window Draperies and all stage curtains extending to floor to have 6" bottom hems with No. 6 jack chain encased in suspended canvas pockets within hems. Front Curtain, Concert Curtain, and Screen Curtain to have 18" turnbacks at center vertical edges. Tormentor Legs and Window Draperies to have 6" turnbacks on all vertical edges. Hems of borders and window valances to be 3" deep, not chain weighted. Window valances and draperies to have pleats spaced 6" o. c.

TRACKS: For the stage, four tracks for front curtain, concert curtain, screen curtain, and rear curtain are required; each is to consist of two sections 21' long, total 42', with a 2'-0" lap at the center. To be No. 280 heavy duty ball bearing steel tracks, as manufactured by Automatic Devices Company, Allentown, Pennsylvania, or an approved equal, equipped with two wheel rubber cushioned ball bearing carriers, turnbuckles, trim chain, adjustable floor block, etc. The cyclorama side legs to operate on six sections 12' long No. 170 ADC Besteel Tracks, or an approved equal. These tracks are to provide for wider and narrower stage setting. Each section is to be equipped with ball bearing end pulleys and adjustable floor block and all component accessories as per above.

For the auditorium windows, tracks for operating draperies to be No. 260 Fenesteel, as manufactured by Automatic Devices Company, Allentown, Pennsylvania, or an approved equal, mounted on 6" boards installed 6" above window openings, complete with all operating accessories.

RIGGING: Furnish 9 five line cable sets of rigging for the following items: Front Teaser Border, 3 cyclorama borders, and picture screen. Each set to consist of the following:

5 -	8" single sheave underhang loft blocks
1 -	8" five sheave head block
1 -	Clancy No. 7085 x 48 combination five line clew and counterweight arbor with guides
1 -	Clancy No. 855 M floor block
60	feet 3/4" Manila rope hand line
500	feet 1/4" 6 x 7 wire cable
350	lbs. (average per set) Clancy No. 1084 oblong counterweights to fit above arbor
10 -	1/4" cable clips
2 -	No. 79 turnbuckles
5 -	No. 1192 B trim chains
1 -	Clancy No. 533 Safety rope clamp
1 -	1¼" pipe batten 42' long operating line for each set to run from bottom eye of counterweight arbor down to and around floor block and to tie off at pin rail.

Furnish One Lock Rail 20'-0" long, Clancy No. 518, or an approved equal, to be bolted to stage floor in proper position to tie off above rigging lines at desired positions. Rail to be complete with 4 upright supports in order to provide for secure bracing.

SIZES OF CURTAINS (all sizes given are finished sizes):

Teaser Border - One Section 39'-0" wide x 10'-0" high. Bottom edge trimmed with 8" bullion fringe, color to be selected.

Front Curtain - Two Sections each 21' wide x 21' high.

Tormentor Legs - Two Sections 7'-6" wide x 20' high.

Grand Drapery Border - One Section 39'-0" wide x 6'-0" high.

Concert Curtain - Two Sections each 21' wide x 18' high.

Cyclorama Borders - Three Sections 42'-0" wide x 5'-6" high.

Screen Curtain - Two Sections 21' wide x 18'-0" high.

Cyclorama Side Legs - Three pairs, in six sections 8'-0" wide x 18' high.

Rear Curtain - Two sections 21' wide x 20'-0" high.

Auditorium Window Valance - 7 Sections 10'-0" wide x 2'-0" high. Valances to be trimmed with 6" bullion fringe to match teaser border fringe.

Auditorium Window Draperies - 14 Sections 5'-0" wide x 12'-0" high. Curtains are to extend 6" above openings, 6" below, 8" past each side of windows.

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PROJECTION PICTURE SCREEN - 16' wide - 12' high, Radiant Automatic Senior, as manufactured by Radiant Manufacturing Corporation, Chicago, Illinois, or Da-Lite Automatic Electrol, Da-Lite Screen Company, Chicago, Illinois. Screen to be housed in wooden or metal case, equipped with oiled-for-life, 110 volt; 60 cycle motor engineered for quick, quiet, efficient up and down movement of the screen fabric. Sufficient flexible electrical cable to be furnished to lowering bottom of screen to 18" of stage floor.

CHORAL ROOM

MATERIALS: **Stage:** Valance border and front curtain to be made of Saluda Velour - Materials to be same as specified for Stage in Main Auditorium.

Windows: Window Valances and Draperies to be made of Saluda Velour, lined with Barathea Cloth, the same as specified for Window Sets in Main Auditorium.

All of above materials to be mill-flameproofed and colors to be selected by the Architect.

FABRICATION: Fabrication to be same as specified for Main Auditorium.

TRACKS: For the stage, front curtain is to operate on No. 170 ADC Besteel Track, as manufactured by Automatic Devices Company, or an approved equal. Track to be in two sections 12' long, total 24', complete with all operating accessories.

The three sets of window draperies to operate from No. 260 ADC Fenesteel, mounted on 6" boards, complete with all operating accessories, same as specified for the Main Auditorium.

SIZES OF CURTAINS: (All sizes given are finished sizes).

Stage Valance - One Section 20'-0" wide x 2'-0" high. No trimming on Valance.

Front Curtain - Two Sections 12'-0" wide x 9'-0" high.

Window Valances - Three Sections 6'-0" wide x 1'-6" high. No trimming.

Window Draperies - Six Sections 3'-0" wide x 7'-6" high.

INSTALLATION: Prices are to include delivery and installation by the Stage Equipment Contractor of all equipment as specified above. All dimensions and conditions at the site shall be the responsibility of the Stage Equipment Contractor to make sure that the curtains and borders provide a properly masked stage and make sure that all stage equipment is installed to operate efficiently and safely.

Window Draperies shall all be installed so as to black out all openings when closed and have a minimum center lappage of 1". This Contractor shall furnish and install all members, clips, beam clamps, brackets, braces, screws, bolts, and other necessary accessories required to secure his work to the structural members and walls of the building.

Shop drawings and samples of all fabrics shall be submitted to the architects for approval before any fabrication is started.

VENETIAN BLINDS

GENERAL: Furnish and install Venetian Blinds as herein specified at all windows in areas so scheduled on drawings. All colors shall be selected by the Architect.

SLATS: All slats shall be made of Flexalum spring-tempered aluminum alloy, or equal, with a yield strength of not less than 55,000 pounds per square inch capable of withstanding a 180° bend over a diameter of $1\frac{3}{8}$" without permanent deformation. They shall be 2" wide plus 0" minus .030" and .011" thick plus .0005" minus .001". The ends of slats shall have rounded corners with both cut ends and rout holes free from rough edges or burrs.

SLAT FINISH: Slats shall be duratized or receive equivalent treatment, to provide maximum bond between the metal and the finish, capable of withstanding 5% salt spray solution at 90° F. heat for 300 hours without blistering, corroding, chalking, changing color, or loss of gloss or adhesion after a recovery period of 30 minutes. The baked enamel finish to be mar-proofed against surface abrasion from slats rubbing against each other. Finish must withstand 250 hours exposure to weatherometer test without blistering, corroding, chalking, loss of gloss, or change in color after a recovery period of 30 minutes.

TAPES: Shall be $1\frac{1}{2}$" wide Flexalum vinyl plastic. Side tapes shall be reinforced longitudinally. Ladders shall be uniformly spaced with 30 ladders to 48" of tape, with maximum permissible cumulative error not to exceed $\frac{1}{8}$" in that distance. Tape spacing - maximum distance between tapes 34".

TOP BAR shall be a "U" shaped channel specially treated and painted for maximum resistance to corrosion or rust. Front, back and bottom shall be of sufficient depth to conceal all operating mechanism at eye level. Metal used shall be of sufficient strength to support blind without sagging, twisting, or distorting.

BOTTOM BAR shall be of tubular form with locked seam not less than $\frac{1}{2}$" thick at the edge nor less than 2" wide, and specially treated and painted to obtain maximum resistance to corrosion or rust. Contour of the bottom bar shall match the curvature of the slats.

MOUNTING BRACKET shall have safety locking cap to securely hold head bar in place, as well as provide easy removal of blind. Blinds over 84" in width and over 75 square feet in area to be provided with additional intermediate supports evenly distributed along head bar with maximum spacing of 72".

TILTERS shall be made of steel, fully electro-plates for maximum resistance to corrosion or rust. To be fully enclosed and lubricated, with cord positively locked to drum to prevent slippage and insure accurate timing. The working parts shall include molded nylon gears and brass worms, which produce an anti-friction condition, have the ability to hold the slats in any tilted positior position, and assure ease of operation and long life.

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1
1

CORDS: Cords shall be No. 4 of braided nylon jacket construction of not less than 4 ends 210-35 denier type 300 nylon, or 3 ends 260-17 denier type 300 nylon. Filament yarn only to be used. All cord shall have not less than 175 pounds breaking strength.

LAWN PREPARATION AND PLANTING WORK

SCOPE: Moving and placing topsoil from stockpile on Site, supplying and planting lawn and all related items necessary to complete the work in accordance with the Drawings and Specification are a part of the Contract unless specifically excepted.

TOPSOIL: Topsoil to be distributed for the work from stockpile on the site shall be a fertile, friable, natural topsoil, typical of the topsoil of the locality. It shall be without admixture of subsoil and shall be free of stones, lumps, plants or their roots, sticks and other extraneous matter, and shall not be delivered while in a frozen or muddy condition.

COMMERCIAL FERTILIZER: 4-8-6 shall be of standard grade and shall comply with the State Laws of Georgia.

The fertilizer shall be delivered to the Site in the original unopened containers which shall bear the manufacturer's guaranteed statement of analysis.

LAWN MATERIALS: Stolon (roots) for this work shall be Cynodon dactylon Bermuda stolons, and shall be healthy, vitorous, freshly dug and not allowed to freeze, dry out or be otherwise damaged, and shall be free from weeds or other foreign matter. Contractor shall submit samples of such stolons (roots) to the Architect for his approval. They shall be suitably covered when out of the ground but not so tightly as to cause heating, and they shall be kept moist, cool and shaded until planted.

Seed-Hulled Bermuda seed shall be of standard grade.

All areas to be developed as lawns are shown on the Drawings.

Preparation of subgrade soil: The subgrade soil shall be loosened to a depth of 3 inches and graded to remove all ridges and depressions so that it will be everywhere parallel to proposed finished grade. All stones over two inches in any dimension, sticks, rubbish, and other extraneous matter shall be removed during this operation. No heavy objects except lawn rollers shall be moved over lawn areas after the subgrade soil is again loosened and prepared as specified above before topsoil is spread.

PREPARATION OF AREA SURFACES: After the subgrade soil has been prepared, three inches of topsoil shall be spread evenly thereon by hand or other approved method and the area then rolled with a 200 pound roller. No topsoil shall be spread in a frozen or muddy condition.

Where areas are to be seeded, the finished surface of the topsoil shall conform to the finished grade, shall be free of hollows or other inequalities and of stones, sticks and other extraneous matter and shall be satisfactory to the Architect.

For areas to be planted with stolons the surface of the topsoil shall be brought to within one inch of the finished grade.

APPLYING FERTILIZER: The 4-8-6 Fertilizer shall be applied at the rate of 20 pounds per 1,000 square feet to the finished surface after the lawn is planted and before the final rolling and watering. It shall be thoroughly raked into the top one inch of the surface and the area then thoroughly watered.

PLANTING: For areas to be planted of Bermuda stolons and seeded between April 15, and September 1, immediately before the stolons are to be planted, the ground shall be scarified and raked until the surface is smooth, friable, and of uniformly fine texture. No stolons shall be planted in any area which has not been so prepared.

The stolons shall be thoroughly separated so that no tangled masses or clumps remain and shall be cut or broken in a manner satisfactory to the Architect. The stolons shall be evenly broadcast at the rate of one and one-half cubic yards to 1,000 square feet and firmed into the soil by rolling with a 200 pound roller, overseed with Bermuda seed 1-1/2 pounds per 1,000 square feet. A layer of topsoil to sufficient depth to bring the entire area to finished grade, after settlement, shall be spread over the stolons, smoothed out by lightly raking or dragging, rolled once with a 200 pound roller, and thoroughly watered with fine spray.

CLEARING OF GROUNDS: Upon completion of the work, the project grounds shall be cleared of all debris, and of all superfluous materials and equipment which shall be entirely removed from the premises to the satisfaction of the Architect.

MAINTENANCE REQUIREMENTS: The operations of maintenance shall begin immediately after each portion of lawn is planted and shall continue for 60 days or shall further continue until the requirements, as specified below, have been fulfilled.

All lawns shall be kept in a healthy, growing condition by watering, weeding, mowing, rolling, trimming, edging and by any other necessary operations of maintenance. At the conclusion of the maintenance period, all lawns shall have a close stand of the grass specified to be planted and shall be free of weeds.

Replanting shall be done as frequently as necessary to produce a close stand of grass over the entire lawn area.

Lawns shall be adequately protected against trespassing and damage of any kind. Lawn areas that have been damaged or washed out shall be promptly renewed.

On awarding of the Contract, this Contractor shall furnish to the General Contractor a breakdown which shall be used as a basis for payments as the work progresses.

WINTER PLANTING: Should this work begin anytime between September 1st and April 15th, the lawn will be seeded rather than sprigged.

~~In such an instance, the lawn will be prepared as heretofore specified, and seeded with 10 pounds of Winter Rye and Fescue in proportions of 60% Rye to 40% Fescue, and treated as heretofore specified.~~

~~Immediately before the seeds are to be planted, the ground shall be scarified and raked until the surface is smooth, friable, and of uniformly firm texture. No seed shall be planted in any area which has not been so prepared.~~

~~The seed shall be evenly broadcast at the rate of three ten (10) pounds per 1,000 square feet and firmed into the soil by rolling with a 200 pound roller. Entire area to be watered with a fine spray.~~

Preparation of soil, fertilizing, rolling, etc., for Winter Planting is to be as specified above.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS, ATLANTA, GEORGIA

BULLETIN NO. 1,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

TO
BIDDERS:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

Item 1. SPECIFICATIONS, SECTION C - 9.
Eliminate this entire Section and substitute the following:

ROOF DECK

SCOPE: This contract includes the furnishing and installing of bulb tees, Roof Plank, Light Weight Roof Fill, and the concreting of cants.

MATERIALS: All roof planks shall be POrex Slabs as manufactured by Concrete Products, Inc., of Brunswick, Georgia.

Planks are to be 32" x 96" and 3" thick.

Sub-purlins shall be rail steel bulb-tees, of size and spaced as shown on drawings. Bulb-tees shall be thoroughly cleaned of all mill scale and rust and given one coat of Zinc Cromate Paint before shipment from factory.

Light weight concrete fill shall be as shown on drawings and the mixture shall be composed of one part Portland Cement and five parts Perlite or other approved light weight aggregate.

INSTALLATION: Install bulb-tees spaced as shown on drawings and securely weld on alternate sides to each support with 3/4" long weld. Ends of bulb-tees shall bear on main purlins or a minimum of 2" on masonry walls. Roof slabs shall be centered on main supports and with full bearing on bulb-tees.

Before applying light weight roof fill wet surface of roof plank. Fill shall slope uniformly from high side of roof and shall be troweled smooth to receive the built-up roofing.

Item 2. SPECIFICATIONS. SECTION D - 10: Eliminate 2nd paragraph, THRU-WALL AND INNER WALL FLASHING in its entirety.

Item 3. SPECIFICATIONS. SECTION SE-1: This Section calls for one Kewanee No. 8356 Instructor's Table installed in the Science Room. This is incomplete as there should be three of these desks, one each in the following areas, Science Room, General Science, and Biology Class Rooms.

Item 4. Three copies of Bid Forms, and three copies of Combined Bid Forms, are attached for your convenience in submitting bids.

We are also enclosing copy of INVITATION TO BID.

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
502 Candler Building,
Atlanta 3, Georgia.

CHS/mt

January 10, 1955.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS, ATLANTA, GEORGIA

RECEIVED
FULLER & PEACOCK, INC.

BULLETIN NO. 2,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

TO
BIDDERS:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

Item 1. DRAWINGS. SHEET A-5.

Where foundation walls are indicated as concrete block; walls should be indicated as brick.

See Section 4-4 and 5-5, Wall Footing Details.

Omit the words "or concrete block, as indicated on Plan", from the Note on Section 5-5 of Wall Footing Details.

Item 2. INVITATION TO BID.

Please note that Sealed Proposals from General Contractors will be received by the State School Building Authority, Owner, at 4th Floor, Kemper Building, 41 Exchange Place, S. E., Atlanta, Georgia, until 3:00 P. M., EST, February 8, 1955.

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
502 Candler Building,
Atlanta 3, Georgia.

ROR/mt

January 11, 1955.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS, ATLANTA, GEORGIA

BULLETIN NO. 3,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

TO
BIDDERS:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

1. SCIENCE EQUIPMENT - SECTION SE-1: Add the following:

   The supplier of this equipment shall furnish and have installed at the factory all traps, plug strainers, overflows, pantry cocks, gas cocks, and electric duplex receptacles required by this equipment.

   Note the Plumbing Sub-Contractor will not be required to furnish all trim on this new equipment. See last two lines of third paragraph of Section P-10.

   The two Lincoln Science Tables will be placed on an island base and they will require longer legs to support the side wings of the tables.

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
502 Candler Building,
Atlanta 3, Georgia.

CHS/mt

January 18, 1955.

RECEIVED
[illegible]
FULLER & PEACOCK, INC.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS, ATLANTA, GEORGIA.

BULLETIN NO. 4,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

To
Bidders:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

1. SCIENCE EQUIPMENT, SECTION SE-1.

   Add the following to this Page:

   In Work Room, furnish and install One Kewaunee Preparation Table No. 8379 with soapstone sink with lead sink plug, strainer and trap.

   In Biology Room, furnish and install Hamilton Nos. W-10, W-12, W-13, W-19, W-62X as shown on Drawings. This equipment will require 6 L-03-C Gas Cocks, 12 L-073-A Electric Receptacles, 4 L-08 cold water cocks, 4 L-2500 soapstone sinks.

   Tops are to be "Hamilcore".

2. Add to Specifications the following Section.

   SPECIFICATIONS FOR FIXED AUDITORIUM CHAIRS, SECTION X.

3. Three Sets of REVISED PROPOSALS FORMS are attached for your convenience in bidding. You will note that Alternate 3 and Alternate 4 have been added.

4. SECTION H-1. Under EXTERIOR WOODWORK, there is a description of wood door frame to the Boiler Room. There is no such door and frame.

5. DRAWINGS. Under SHEET A-3 of the Drawings there is indicated some form of cabinet or shelving in space G-68. Neither cabinet nor shelving is intended.

6. On Sheet A-7 in Area G-34, there should be 3 15" shelves started 5'-0" above the floor.

7. Cabinet Doors listed under Section H-2 must be Birch.

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
502 Candler Building,
Atlanta 3, Georgia.

CHS/mt

February 1, 1955.

SPECIFICATIONS FOR FIXED AUDITORIUM CHAIRS

Auditorium chairs shall be of the fixed type, consisting of an indirect attached plywood back and seat, cast iron end and cast iron middle standards, and a direct attached combination ball and socket hinge, roller bearing hinge, or a combination of both. Chairs shall be available to widths as required by seating plans.

MATERIALS: All wood used in the construction of seats, backs, and arms shall be hardwood. All face plies used in plywood construction shall be whole sheets of hardwood.

All cast iron shall be of a quality and strength that will withstand the American Society for Testing Materials transverse test.

CONSTRUCTION AND WORKMANSHIP: WOOD PARTS

Plywood: Veneers used in plywood construction shall be joined with a resin glue or glue of equal strength and moisture resistance and shall be required to withstand a test of six hours' immersion in water of normal room temperature without showing signs of glue failure on unfinished edges.

All plywood shall be built up from a center core ply in balanced construction consisting of either 5 or 7 plies as hereinafter designated. Cores and cross-bands shall be not less than 1/16" before sanding. Specified dimensions to be in accordance with the established practices of the Veneer Industry.

Plywood Back: Plywood Back shall be of not less than 5-ply construction, not less than approximately 7/16" in thickness, formed on a true curve from standard to standard on a radius of not more than 18" at the center section of back. The overall height of back shall be 20" with a tolerance of plus or minus 1/4".

End Standards: End Standards shall be of cast iron cast in one integral unit, free from pits, blow holes, and fins. End standards shall be subjected to some cleaning method that will clearly bring out the design. The top of the end standard shall be provided with not less than two lugs, cast integrally to provide for the attachment of the arm rest. The rear of the end standard shall be provided with a steel wing, the angle of which shall provide the proper back pitch. Steel wings shall be provided with two holes diametrically enlarged to allow for variations in installatio and for circular seating arrangement. End standards, exclusive of hinge arm and arm rest, shall weigh not less than 15 pounds.

End standards shall be cast to fit the floor incline so that standard will remain vertical and that hinge portion of standard will be a height that will maintain the proper relation of seat height to floor. Each foot shall be drilled to provide for attachment to the floor.

Middle Standards: Middle Standards shall be of a good grade of cast iron. The top of each standard shall be provided with not less than two lugs to provide for attachment of arm rest. The rear leg of the middle standard shall be cast or formed to the desired back pitch angle and shall provide for attaching back clips hereinafter specified. The standards shall be cast to fit the floor incline so that standard will be vertical and hinge portion of standard will be a height that will maintain proper relation of seat height to floor. Each foot shall be drilled to provide for attachment to floor. No center standard shall weigh less than 7-1/2 pounds, exclusive of hinge arm and arm rest.

Back Clips: The rear leg of each standard shall be provided with steel wings to provide for the attachment to the back. Holes in the wings shall be diametrically enlarged to allow for installation variation and circular seating arrangement.

Hinges: Direct Attached Type: Hinges of the direct attached type shall be either direct attached ball and socket type or roller type or a combination of both. One portion of the hinge shall be immovably attached to or cast integrally with the end and middle standards. The seat arm shall provide for the secure attachment of the seat. The bearing of the hinge parts shall consist of a ball and socket joint and rollers that will allow for sufficient angular movement to compensate for floor unevenness and for radial installation of standards. Hinge shall be provided with concealed positive up and down stops, each provided with a cushioned action. Bolts or other means of assembly shall not be used for positive stops. The strength of the hinge, permanancy of the down stops, and quietness of action shall be such as to stand up in ordinary use.

Arm Rests: The arm rests shall be of solid wood and edges shall be well rounded. The under-surface of arm shall be provided with holes to attach to lugs specified under "Standards".

Hardware: All exposed hardware used in the assembly of the chair shall be Parkerized, Bonderized, or otherwise made rust resistant.

Assembly: The plywood back shall be assembled to the standards by means of flat countersunk head carriage bolts inserted through cup washers on the exposed surface. The plywood seat shall be assemble to the seat support by means of screws directly attaching the seat support to the underside of the plywood seat.

FINISH: Wood Finish: All wood parts shall be stained to approved color standard. All wood parts shall receive on all surfaces coatings of genuine lacquer of sufficient film depth to properly protect the woods.

Metal Finish: All metal parts shall be finished by immersion in enamel of approved color standard. All enamel shall be oven baked. The finished enameled surface shall be smooth without trac of pitting, hair checks, runs, or other defects.

GENERAL: The above Specifications are taken from the Peabody Seating Company's Specification on No. 2020 Auditorium Chairs.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS, ATLANTA, GEORGIA

BULLETIN NO. 5,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

TO
BIDDERS:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

1. SPECIFICATIONS, ACOUSTICAL TREATMENT, SECTION M.

   Last Paragraph, Section M-1, should read as follows:

   The acoustical tile on the main ceiling panel shall be 1/2" Acousti Celotex or approved equal, applied on 1/2" x 3" Celotex Fiberboard. The wall furring strips shall be cemented and nailed to plaster. The wall areas of the Auditorium and the ceiling of the Choral Room and the ceiling of the adjacent Stage shall be acoustical plaster as specified hereinafter.

2. Omit first paragraph of Section M-2 and substitute the following:

   On the Ceilings of the Music Practice Rooms, apply 1/2" Acoustical Tile applied on 1/2" x 3" Celotex Fiberboard furring strip as specified for the Auditorium Ceiling.

   Acoustical ceiling of Band Room shall be cemented and screwed to brown coat of plaster on metal lath.

   Acoustical tile shall meet the following requirements.

   Sound absorption at 250 cycles - not less than 60%; at 500 cycles not less than 85%; at 1000 cycles not less than 85%.

3. Auditorium Floor. Over the entire floor of the Auditorium Floor lay Type B Asphalt Tile. The Asphalt Tile shall be applied as specified under Section N-1.

   On longitudinal and cross aisles of the Auditorium, lay 36" wide Ribbed Rubber Runners 1/8" thick.

4. DRAWING A-17. The dimensions of Coping Stone on Drawing No. A-17 shown as 10½", should be 9¼".

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
502 Candler Building,
Atlanta 3, Georgia.

CHS/mt

February 2, 1955.

BULLETIN NO. 6,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

TO
BIDDERS:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

SPECIFICATIONS

1. Add the following to SECTION R - ELECTRICAL WORK:

   The Electrical Contractor shall furnish and install in the Main Switch Board of the Distribution Room One (1) 3-pole, One (1) 225 amp. maximum breaker frame rating with 125 amp. trip rating for feeder - (AA) for Panel AA shown on Drawing E4 Ground Floor Electrical Plan Class Room Wing.

   The feeder shall consist of 4 1/0 type RH conductors in 2" rigid conduit. The conduit shall be run open from the existing Switch Board until it approaches the New Addition and then it should be run concealed in the Corridor to the flush mounted panel "AA".

2. Delete AISLE LIGHTING on SECTION R-15 in its entirety, and insert in lieu thereof the following:

   Floor Outlet locations for aisle lighting fixtures should be obtained from the Seating Contractor. The lighting fixtures should be furnished by the Electrical Contractor but shall be installed on the Auditorium Seating by the Seating Contractor. The Electrical Contractor shall connect all aisle fixtures to the conduit system and shall connect same to their respective controls.

3. Add the following to PLANS and SPECIFICATIONS, SECTION R.

   Furnish 16" Double Dial Secondary Clock and 4" Program Bell. Install midway of the Second Floor Class Room Wing.

WM. J. J. CHASE & ASSOCIATES,
ARCHITECTS & ENGINEERS,
502 Candler Building,
Atlanta 3, Georgia.

JFW/mt

February 3, 1955.

WM. J. J. CHASE & ASSOCIATES, ARCHITECTS & ENGINEERS, ATLANTA, GEORGIA

BULLETIN NO. 7,
NEW ATHENS HIGH SCHOOL ADDITION,
ATHENS, GEORGIA.

TO
BIDDERS:

Attention is called to the following items relative to this work, and Bidders are directed to figure same accordingly:

SPECIFICATIONS:

1. SECTION D-1:

Omit last two sentences and substitue the following:

Exposed exterior walls below grade as in area ways, lay Face Brick in running bond with header courses every sixth course.

2. SECTION D-1:

Perimeter Insulation is to be 1" x 12" as shown on Drawings and not 1" x 24" under slab as specified.

3. SECTION H-6:

MAP AND DISPLAY RAILS: These are not shown on Drawings as stated in this Specification. They should be as specified and are to be mounted over Chalkboards.

4. SECTION I:

FINISH HARDWARE: Exterior doors Numbered 1 thru 9 inclusive are to have 5" x 5" butts and not 4½" x 4½" as specified.

Install Door Closers 43V to all B-Label Doors.

5. SECTION W-1, 2 and 3: Omit this Section in its entirety.

DRAWINGS:

6. DRAWING A-1: Extend walk, curb and gutter a distance of 200' and not 110' as shown on Drawing A-1.

WM. J. J. CHASE & ASSOCIATES,
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